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CONTENTS

CREATIVITY AND CULTURAL CONSERVES--WITH SPECIAL REFERENCE TO MUSICAL EXPRESSION--J. L. Moreno . .	1
A SOCIOGRAMMATIC STUDY OF OEDIPUS-COMPLEX FORMATION: D. H. LAWRENCE'S SONS AND LOVERS-- C. N. Allen and K. Curtis	37
THE J-CURVE HYPOTHESIS: A REPLY TO DICKENS AND SOLOMON--George J. Dudycha	52
FURTHER THEORETICAL CONSIDERATIONS OF THE J-CURVE HYPOTHESIS--Richard S. Solomon	59
AN INDEX OF CONFORMITY BASED ON THE J-CURVE HYPOTHESIS--Richard S. Solomon	63
EMOTIONAL STEREOTYPES IN THE CHICAGO TRIBUNE-- S. S. Sargent	69
AN ATTEMPT TO MEASURE CHANGE OF ATTITUDE AS A RESULT OF HEARING SPEAKERS--Lewis A. Dexter	76
MEASUREMENT OF THE DISSOLUTION OF IN-GROUPS IN THE INTEGRATION OF A RURAL RESETTLEMENT PROJECT-- C. P. Loomis and D. M. Davidson, Jr.	84
NOTES ON SOCIAL GROUP STRUCTURE IN AN INSTITUTION FOR RETARDED CHILDREN--Newell C. Kephart	95
OPEN FORUM	99
REPORTS	107

INTRODUCTION

The purpose of this study is to investigate the effects of various factors on the growth and development of the human body. The study is based on a series of experiments conducted over a period of several years. The results of these experiments are presented in the following chapters. The first chapter discusses the general principles of growth and development. The second chapter describes the methods used in the experiments. The third chapter presents the results of the experiments. The fourth chapter discusses the implications of the results. The fifth chapter concludes the study.

The study was conducted in a laboratory setting. The subjects were a group of healthy young adults. The experiments were designed to measure the effects of various factors on the growth and development of the human body. The factors included diet, exercise, and sleep. The results of the experiments are presented in the following chapters. The first chapter discusses the general principles of growth and development. The second chapter describes the methods used in the experiments. The third chapter presents the results of the experiments. The fourth chapter discusses the implications of the results. The fifth chapter concludes the study.

CREATIVITY AND CULTURAL CONSERVES--WITH
SPECIAL REFERENCE TO MUSICAL EXPRESSION^{1,2}

J. L. Moreno
Beacon, New York

SYNOPSIS

All definitions of creativity to date have been inaccurate because the experience upon which they were based was incompletely portrayed. But since spontaneity work in a controlled environment began our understanding of creativity has broadened. This paper makes use of this new knowledge. It tries to state what creativity is and to discuss and illustrate broadly the pathological deviations from that frame of reference.

INTRODUCTION

The influence which cultural patterns have upon specific persons and, vice versa, the influence which the creativity of specific persons has in the shaping of cultural patterns is a problem which occupies the minds of research workers in many fields of science. Cultural anthropology, sociology, psychology and psychiatry are equally concerned. A methodology has been worked out in this paper which tries to unfold the process of creativity from its initial spontaneous phases and through the intermediary stages up to the finished product.

The fate of a culture is finally decided by the creativity of its carriers. If a disease of the creative functions has afflicted the most primary group, the

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1. The author wishes to thank Mrs. Gertrude Franchot Tone for her valuable assistance in the therapeutic theater during the therapeutic sessions.
 2. The author is greatly indebted to Dr. Ernst Fantl and to Mr. Harry Kassner for their assistance in the writing of this paper.

creative men of the human race, then it is of supreme importance that the principle of creativity be redefined and that its perverted forms be compared with creativity in its original states. This problem has never been properly examined and the solution demonstrated. Creativity as a frame of reference has not been established, and so a basis for a critique of deviations has been missing. Psychiatry has been limited to the neurosis and psychosis of the average intellect. The patient of creative mentality has been neglected. Analysis of works of genius or of genius in retrospect on the basis of material gained from analysis of patients of average mentality is often misleading and erroneous. The task of the psychiatrist is therefore to face a person of creative mentality in the midst of his dynamic difficulties.

Presentation of the Problem

The patient (A. S.), aged 45, is an outstanding violinist. He is concert master of a well-known symphony orchestra. He writes music and directs a music school. When he plays before a large audience he has a trembling in his right hand. The trembling develops from the thumb and spreads through all the fingers of his right hand and goes up to the wrist. The condition becomes worse while he plays. Finally the whole hand shakes. He tries anxiously to steady the trembling bow so that the tones will not tremble. He is afraid that if this happens, the whole audience and his colleagues will become aware of the fact that there is something wrong with him. When he tries to steady the bow, the tones which it produces lose all the beauty and quality which his playing usually has. As he expresses it--"the strings become cold and dead." Finally also the left hand which holds the violin stiffens and his touch loses equilibrium and softness. As these attacks occur often, he fears playing in public. He has the attack usually when playing with his orchestra before a large audience and always when playing solo. He also has it before an invisible audience (broadcasting). He has no attacks when playing alone, in the presence of his wife, or when teaching his pupils.

The Instrument

His violin is an old Stradivarius. In the relationship of an artist to his work several factors have to be considered. First, there is the relationship of the artist to his instrument--the factor of adjustment.

The instrument is outside of him. It is not a part of him like his voice when he sings or like his legs when he dances. It is a foreign organism. A pupil learns to incorporate the violin so that it becomes a part of him, so that he may use it at all times as he uses his voice when singing or his legs when walking. Some people develop a fear of walking, speaking, singing, or writing, a similar disturbance may develop in a pupil in relation to his violin. Such a fear develops more easily if the instrument is independent of the person. A violin is more independent of a person than his own tongue. The gap between the artist and the violin may be one of the reasons for the development of maladjustment. The problem of adjustment differs from instrument to instrument. It is different with a violin, a piano and an organ. For instance, the piano is a unity, but a violin consists of two independent parts, the string instrument and the bow. The string instrument is to be adjusted to the left hand; the bow is to be adjusted and guided by the right hand. Playing the violin is therefore a combination of movements, the left arm holding it, fingering it, and the right hand drawing the bow. Some forms of anxiety may creep in and produce a performance difficulty between instrument and hand. In the case of our patient the vibrating effect may come from the trembling right hand when guiding the bow over the strings. It may spread from the trembling of the left hand when it moves upon the string. It may be precipitated when the patient plays in a certain key or in a certain tempo or forte or pianissimo.

In addition, every artist develops a personal relationship to his particular instrument. The struggle which he has had in the process of adjustment often produces in him tender feelings. Our patient, for instance, is jealous if any one plays on his violin as another man is jealous in relation to a woman.

The second factor is the relationship of the musician to the music he is producing. We have made clear that the violin is foreign to his body and that he has to go through a process of gradual adjustment until it becomes a part of him. Similarly the musical works which he is reproducing are foreign to him. They do not come from within him; they are not made from his own psychic stuff. They are finished products, creations of other minds.

The third factor is economic. When A. S. bought the violin, it was an important investment. Now it is just as valuable to him as the voice is to a singer. It is the source of his income.

The Orchestra

Another important adjustment problem of a musician is his position in the orchestra. He and his instrument are a part of a large whole. First, there is the symbolic position which his instrument has within a certain piece of music to be orchestrated and for which the composer has already provided. The composer, when he creates a symphony, is like a utopian conductor. His musical world is organized to perfection. Each instrument has a definite immovable place within it. It does not exist by itself but is in definite relationship to the place which each other instrument holds. The musical position of one instrument corresponds to a number of other definite musical positions which are interdependent; their totality makes a symphony. The interrelationship between two or more musical positions can be called the musical tele.

Thus an orchestral symphony is a cultural atom, an esthetic analogy to social atom and social structure. Since it aspires to symbolic perfection it has an analogy in the theological sphere. We assume of God that he created the world in such a manner that each creature has its place and function within it. A conductor directs and the interaction of all produces the universe of music.

Then there is, second, the musician's actual position as a man and as an artist within the membership

of a given orchestra. In the given symphony orchestra the patient plays the violin. If he were to play a cello or a flute, that in itself might change his position, but he is among the first violins. He is the concert master. That also puts him in another position than if he were merely one of the violinists. His orchestra consists of more than one hundred men. He is extremely apprehensive of their feelings toward him and toward his rôle. He is more interested in the first violins and in the second violins than in the cellos, harps, or flutes.

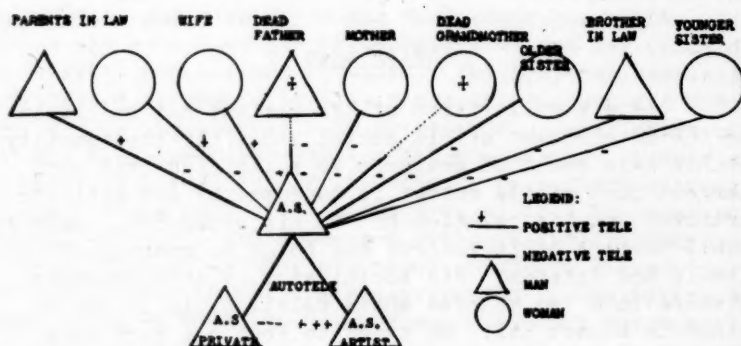
The conductor is the central symbol of the orchestra. He and the conductor have a positive mutual tele. There are many men who are striving to become concert masters. Among these is a Frenchman with whom the patient used to sit in the orchestra, an Italian master, and a university professor who has been trained in Europe. Naturally they are jealous of him. He claims that when he plays they look at him, laugh ironically, and want him to fail.

Social Atom

The peculiarities of the patient can be traced to the development of his social atom. If the quantity of his tele could be measured we would find that the largest part of its energy is consumed by his artistic interest and his relationship to his orchestra. Only a small portion of it is free and bound to members of his family and friends. His social atom is categorically divided into two spheres whose relationship to one another is almost nil. He tries to keep one part away from the other, just as he tries to keep the two persons in himself apart from one another. He does not bring his associates to his own house and he does not like to have his relatives go to his concerts. His wife did not visit his concerts for two years. The family seems unimportant and insignificant to the patient. He and crucial members of his family were interviewed. His status when the treatment began is portrayed in Socio-gram 1.

The father, who died while ill from a mental disease, was critical of his son's vocation. The son

in turn resented the father's opposition. Mother and son did not agree. After the father's death she lived alone. The grandmother had lived with their family but felt rejected by everyone in the family and committed suicide. He had nothing in common with his older sister. She and her husband lived in the garret of the same house. The husband fought with the family. After an argument, he also committed suicide. The sister moved away and retained a bitter resentment towards the patient. The younger sister was the pet of her father. There was jealousy between her and the patient. She married and lives in a neighboring town, but they have not visited one another for many years. The wife has little understanding of his art. She prefers light music to classical music. There are no children. The patient lives in the same house with his parents-in-law. There have been frictions.



Sociogram 1

The sociogram portrays also the patient's relationship to himself, his autotele. He shows a violent dislike for the social appearance of his personality, his private counter-ego. He is a poor family man. He does not want children. All his feeling goes to his desire to be a great artist. He has developed a strong

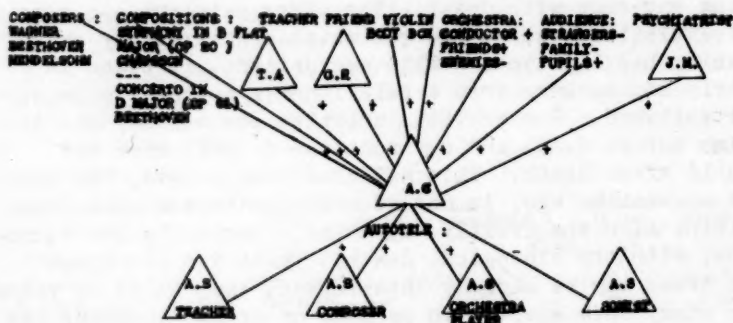
image of himself, a person who can show creative power. Towards this image, the image of his creative ego, he feels a strong positive tele. But since he developed his illness, his belief in his destiny is shaken. The relationship to his art which gives meaning to his life is disturbed. He has had thoughts of suicide. He made feeble attempts to help himself, and finally consulted a psychiatrist.

The creative artist's personality is broken up into two fundamental rôles in life. This split is the outcome of a normal development. It is the outcome of necessity and not of disease. The one pattern is his private personality. It begins at the moment of conception and ends with death. The other pattern is a specific artistic creative process which begins at any period during his lifetime. With our patient, it began in early adolescence when a relationship to the violin was established. The artistic creative process may die any time before death and may continue to influence the world after death. This new creative process, the birth of a creative ego, is not identical with the biological birth; also the creative death of a person is not identical with the biological death. These two processes at times may be closely interlocked. But it is of value to study them apart. In persons of creative genius the artistic creative process more or less dominates completely the biological person. The latter may become a parasite of the former. The creative ego may be using, hurting and destroying the private ego. This is one of the reasons why the private lives of Beethoven, Dante or Dostoyevsky can be considered merely as the material from which they were continuously drawing stimuli. The person of creative genius is cruel to himself and to the members of his social atom if it only helps the creative product.

The patient is more closely related to objects, symbols and rôles than to actual persons. A special sociogram is here drawn for the portrayal of these relationships. Sociogram 2 is a necessary counterpart of sociogram 1. Combined they portray the pattern of his social atom fully.

The violin is the central symbol. The tele towards it is divided into a tele towards its body and a

tele towards its bow. An indication of the intensity of the violin tele is the time the patient spends with it. He is rarely seen without it. There is a positive tele to such compositions as the Symphony in B Flat Major (Opus 20) by Chausson and the Concerto in D Major (Opus 61) by Beethoven. He has a positive tele towards similar compositions. His dead music teacher (T. A.) also suffered from trembling. The best friend of his adolescence was a music student (G. R.). He went insane and is committed to a mental hospital. Positive and negative tele are portrayed towards the various members of



Sociogram 2

his orchestra. His positive tele towards the conductor is peculiarly affected by the likes and dislikes the conductor has for other members of the orchestra. He has a negative tele towards a large number of his colleagues, sixty of whom he considers his enemies. Although he knows them superficially he has a clear picture of their opinion. It is jealousy. He thinks they know about his disability and talk about it. The patient makes a distinction when he is playing with the orchestra in his phantasy and when he is actually playing with it. When he is thinking of the orchestra he sees himself always failing. When he is playing with it he feels that the conductor in front encourages him and that two violins in the fifth row try to tear him down. Tele is directed

towards musical friends and pupils in the audience. New persons disturb him. Members of his family do not disturb him, but he does not like their presence. The positive autotele towards himself as a creative agent is further subdivided into the rôles of teacher, composer, orchestra player and soloist. He is negative towards himself as a soloist and positive in all other instances. Since the treatment began a positive tele has developed towards the psychiatrist who treats him.

Diagnostic Experiments

There are some patients who place the psychiatrist in an embarrassing situation. If they have a mental disturbance they do not come to be relieved from it. They do not want to lose their mental illness. They have a fear and suspicion that with it they will lose the very basis of their creativity. Their true identity is as a creator. Such a person does not mind being neurotic as a private person as long as it helps him to be a creator in his chosen vocation. Health and mental balance may mean death to his deeper mission. I recall a patient, a poet, who had suffered from a mental disorder and who had been treated successfully. He claimed that since his "cure" he had lost his creative power. He felt terrible. He wanted his old neurosis "restored." The neurosis might bring back his creativity.

The patient (A. S.) is an excellent illustration of such a problem. He came to me because he wanted to become a creative musician. He believed that he was a handicapped creator. He knew that he was maladjusted as husband and son. He suffered from unholy sexual phantasies, from gambling instincts, moods of self-accusation and depression. But he was afraid to lose these maladjustments of his private person. With them his creativity might vanish. His norm was not his private personality. He had a new norm, the norm rising from his creative objectives. The problem compelled me to develop a method of treatment which departs from known psychiatric procedures. I left the private ego of the patient dormant, considering it only secondarily, but studied closely the development of his creative ego. First, I traced

the faults in his creative process and then I invented correctives for these faults.

The patient's condition was examined in the therapeutic theater. The following diagnostic experiments were made: The patient plays without a bow. He plays without the violin body. He plays without any instrument. He plays without an audience. He plays before different audiences. He plays solo. He plays in a group. He plays a musical conserve,³ forte and pianissimo. He improvises nonsensical music. He improvises a theme expressing aggression and a theme expressing tenderness.

In the first experiment, the patient plays without a bow. He makes believe he has a bow in his right hand which he moves up and down. In the second experiment he plays without the violin body. He makes believe that he holds the violin and touches the strings with the fingers of his left hand. In the third experiment he is without any instrument. He tries to visualize in all these tests a certain piece of music which he is "playing." He is told to imagine that he is playing for a deaf mute who does not hear sounds but only sees the vibrating body of the artist and the movements of his hands.

He shows no signs of trembling in these tests. He does not tremble because the instrument is eliminated. It is all a play in phantasy. The trembling reaches back into the evolution of his learning to play the violin. His overflow of spontaneity makes the adjustment to a technical instrument an unpleasant task. His first music teachers discouraged and almost ruined the spontaneous trends in his artistic make-up. A musician may advance beyond the "phonetic" music of the player of an instrument into the inner music of the creative composer. A Beethoven who has freed himself from all instruments and, thanks to his deafness, even from the hearing of sounds has reached a degree of spontaneity which is far

3. The conservation of cultural values by means of the dance, drama, religion, custom, etc., substituting and preserving man's creative expressions. An example is the drama of Aeschylus, Sophocles, and Euripides which began as the extempore Dionysian play.

profounder than the limited spontaneity of the instrument player.

Our attempt was to reconstruct the highest possible level of spontaneous creativity. But even Beethoven, the creative man par excellence, worked through specific media of expression which were indispensable to the particular process in which he engaged. He was not a free creator. He was bound to create within a certain frame, a musical notation conserve. Even the greatest musical composer of our culture has to accept this frame.

In this frame not only must the play be spontaneous, but also the body of the player and the phantasies which accompany the creative act. The gestures which accompany it, the moods which precede it--all have to fit into a harmonious constellation. They are the nourishing ground for a healthy development of creative personality. Distorted experience in the first years of this development has a similar effect upon the outcome of such a personality as faulty training has in the development of the private ego of an infant in the crib and in the nursery. The "nursery of the creative ego," the music schools, the dramatic schools, etc., have become in our technological age an unhealthy training place for all types of genuine ability.

The next test places the patient before different audiences. The first audience consists of persons with whom he is acquainted and whom he considers friends. He does not show any sign of trembling. A member of our staff, with whom he is not acquainted comes in, and soon he has a bad attack. After several sessions, as soon as he has become well acquainted with this person, no trembling is caused by his presence. During the next session an audience is put together which consists of strangers and of persons who do not like him. He has a bad start and a vicious attack of trembling. When the audience is so large that he cannot survey them easily he is more inclined towards an attack than when the audience consists of a few selected persons. Apparently he fears the "grape-vine," the chain and network formations, which are harder to control if the audience is large.

The disturbing effect the audience has upon him can be explained if we recall the constellation of his social atom. His private ego is surrounded by persons

towards whom he is indifferent. In turn they do not appreciate him: "nemo propheta in patria." In his phantasies, however, his image is that of a creative genius who will conquer the world, who will find in it admirers, followers, brothers and sisters of a higher sort. An audience which is formed by persons who belong to his primary social atom, since they do not inspire him, also do not disturb him. His mother, his sister, and his wife do not precipitate in him that anguish which drives him to an incoherent, neurotic performance. The persons who upset him all belong to that new secondary social atom which is able to inspire him and from which he tries to draw a mass of followers. It is in this task that he has failed.

That audience before which he sees himself performing as a creative ego has assumed superhuman proportions. It is filled with beings whom he feels more as symbols than as real beings, whom he feels as harsh judges and critics. This situation had not arisen recently. It takes us back to a time when the new creative ego was conceived in him. At this time when he began to reject his family and finally himself as a part of it, he looked for two substitutes, a new ego and a new and higher family.

In the next test he first played solo and then in a group before various audiences. In solo play the trembling appeared almost regularly. When he played with a group it appeared less often. The patient reported that he had a shock just the same but he overcame it more easily and hid it better. The personality of the co-players and their relationships to him encouraged and discouraged him in group playing. Thus, just like the conductor in the orchestra, every member of the group would become his auxiliary ego and influence his performance. In a solo play, on the other hand, he had no rescue coming from within and no rescue coming from without.

In the next group of experiments we tested the quality of his performance in playing different compositions, musical conserves of various composers, with special emphasis on tempo and key. The patient selected Beethoven's Concerto in D Major, Opus 61, for the violin. During the performance he began to tremble.

There are works which survive their creators and eventually dominate man's patterns of culture. They survive because of certain technological processes which conserve them. These conserves may enter into the flesh of the artist and control him from within, as, for instance, in the actor, or they provide technological forms with a content, for instance, books. We can visualize a period of civilization before they were discovered. There are cultural conserves underlying all forms of creative activities--the alphabet conserve, the number conserve, the language conserve, and musical notations. These conserves determine our forms of creative expression. They may operate at one time as a disciplining force--at another time, as a hindrance. It is possible to reconstruct the situation of creativity at a time prior to the conserves which dominate our culture. The "pre-conserve man," the man of the first universe, had no musical notations with which he could project the musical experiences of his mind, no alphabetic notations with which he could project his words and thoughts into writing. He had no mathematical notations which became the basis of science. Before he had selected from the inarticulate mass of sounds and vowels which developed into our languages he must have had a relation to the process of creativity different from modern man, if not in the source itself, certainly in projection and expression. When we removed from the patient one conserve after another and nothing remained but his naked personality, the pre-conserve man came closer to our understanding. He must have been guided by the warming-up process inherent in his own organism, his master tool, isolated in space, unspecialized yet, but working as a totality, projecting into facial expressions, sounds, movements, the vision of his mind. A sort of psychodrama may have been the common denominator of all sorts of cultural conserves in which culture has gradually specialized itself. The sounds uttered by him originally, a simple device for making a life situation as expressive as possible, developed gradually into the phonetic residuum of the first alphabet which was selected in preference to other sounds. We find a hangover of the pre-conserve technique of the psychodrama in the preparatory phase of every individual work of culture. The

inspirations which lead a creative man to produce a work of culture are spontaneous. The more original and profound the problem is which a genius sets himself the more is he compelled to use, like the pre-conserve man, his own personality as an experimental tool and the situation around him as raw material.

The struggle with the cultural conserves is profoundly characteristic of our whole culture; it expresses itself in various forms of trying to escape from them. The effort to escape from the conserved world appears like an attempt to return to paradise lost, the first universe of man, which has been substituted step-by-step and overlapped by the "second" universe in which we live today. It is probable that all cultural conserves are the final projections of the tremendous abstractions which man's conceptual mind developed in a struggle for a superior existence. Gradual abstraction led from the pictures of things to the letters of the modern alphabet and to the numbers of arithmetic. The gradual abstraction and differentiation of sounds laid the ground for musical notations. But what must have been common to the Beethoven of the pre-conserve area and the Beethoven of our time is the spontaneity level of creation. However, it was then unchanged by the devices which dominate our culture and it was perhaps for that reason more powerful--on the other hand, less articulate, and less disciplined than our products today.

The phylogenetic rôle of the cultural conserve corresponds to an ontogenetic rôle. When a conserve enters into the consciousness of the creative ego in the phases of growth, insignificant pathological responses can be noticed. If, for example, a pupil plays a composition which he has rehearsed he may experience a painful dilemma in the performance situation. For a while his memory may work excellently. It may carry his playing fluently until he arrives at a certain passage. Suddenly a gap occurs. He no longer remembers. Side by side with the tendency to localize the memorized passage arises the tendency to create a new passage. The two tendencies interfere with one another. The longer the disturbance lasts the more difficult does it become for the player of the memorized passage. No matter how well he may have known the passage shortly before the performance, he fails during the act. Two simultaneous

and opposite tendencies are in process and the more energetic these are the more desperate is the crisis. One tendency centers on the same state centered by the traitor memory. The other tendency is directed to the effort of creating something new. This collision can be called "ambicentric" crisis. Improvised passages may be influenced by some of the memorized parts and make the improvisations impure. In the spontaneous states unsuitable and weak fragments appear. They are characteristic symptoms of a degeneration of creative acts. The performance then becomes pathological and the product shows absence of affection, confusion of memorized with spontaneous fragments, uprising of weak and unsuitable ideas, lack of coordination between one passage and another, and loss of sensitiveness as to the correct length of a musical passage.

During the experiment described above the patient felt that the trembling was coming long before it actually happened. It was foreshadowed by "signals" as he called them. Certain images appeared quicker and quicker and in an increasing variety. These images were largely images produced by fear. They interrupted his grip on the bow, the promptness of his touch on the strings. Sometimes these images were images of persons. He saw a competitor sitting in the audience, pointing at him. He saw himself falling down the stairs. The faces of all persons in the first row blurred. Sometimes he had optic images. He saw red, blue, green, and black spots swimming before him. Sometimes he had motor images; he felt a cramp in his right hand; his left thumb stiffened; it spread to the second and to the middle finger. His breath became shorter. Sometimes he had word images. He saw headlines in newspapers. Sometimes he had musical images. He saw musical notations and keys. Such images of fear were associated with the trembling. It is significant for the patient that the trembling was far more often associated with "pianissimo" passages than with "forte" passages. He reported that he had experienced the same difficulty in the concert hall. This phenomenon found an explanation in the next group of experiments.

The next group of experiments were spontaneous improvisations. The purpose of these experiments was to

free the patient gradually from the burden which musical conserves inflicted upon his performance. The theme was given to him: "house, smoke rising, more excitement, people coming in, fire burns house down." He played powerfully and rapidly for about five minutes. There was no indication of trembling. The patient never felt "it" coming. In the next experiment he was given the following theme: "a mother with a babe in the cradle, rocking it to sleep." He played softly and slowly. He was not so effective as in the former test but there was also no indication of trembling. Hundreds of such spontaneity tests were made with the patient, several of which are illustrated in the following pages. Regardless of whether the theme was suggested to him by us, whether he himself suggested a theme, whether he was limited to a certain tempo, a certain key, a certain frequency, forte or pianissimo, or whether he was asked just to play without thinking, he never had any indication of trembling and he never felt it coming. In another experiment we emancipated him not only from a certain musical conserve, from a certain tempo or key, but also from the rules and conventions of musical notations. He was to play against musical conventions. He was asked to combine sounds regardless of whether their association produced any musical "meaning." Again we found that there was no indication of trembling.

It must be emphasized, if we want to understand these phenomena, that the warming-up process in a spontaneity test differs fundamentally from the warming-up process in a musical conserve performance. The one is autonomous, at least in the moment of production; the other presupposes a successful adjustment to and synthesis of different egos and minds. The patient, before he begins to play in the spontaneity test, is vivacious, speaks with gestures, moves his body and head to-and-fro. Correspondingly his mind, in the preparatory phase, is crowded with rudimentary motor images and motor reflexes. In spontaneity tests these motoric strivings find an immediate natural outlet. The performance makes use of them in a positive sense. They are as elements integrated into the creative act. The patient does not have to push them aside. But in the preparatory stage and during the performance of a conserve the brushing aside

Musical production reveals the style of a certain personality. Spontaneous creation, in music as well as in the drama, has to be viewed from a different angle than that of finished products, or conserved works. Spontaneous creations and finished creations have a totally different cultural meaning.

SMOKE RISING, EXCITEMENT, PEOPLE, HOUSE BURNS



THIS IS A FRAGMENT OF A LONGER IMPROVISATION. THE PATIENT DESCRIBES THE OUTBREAK OF FIRE. IN ORDER TO EXPRESS HORROR AND ANXIETY, HE USES IRREGULAR MUSICAL FORMS. THIS MAY BE AN ERROR FROM THE POINT OF VIEW OF CLASSICAL COMPOSITION, BUT IT INDICATES A SPONTANEOUS IMPULSE TO FREE HIMSELF FROM ESTABLISHED RULES.

SHEPHERD PLAYING FLUTE, MOUNTAIN IN BACKGROUND,
PEACEFUL SCENE



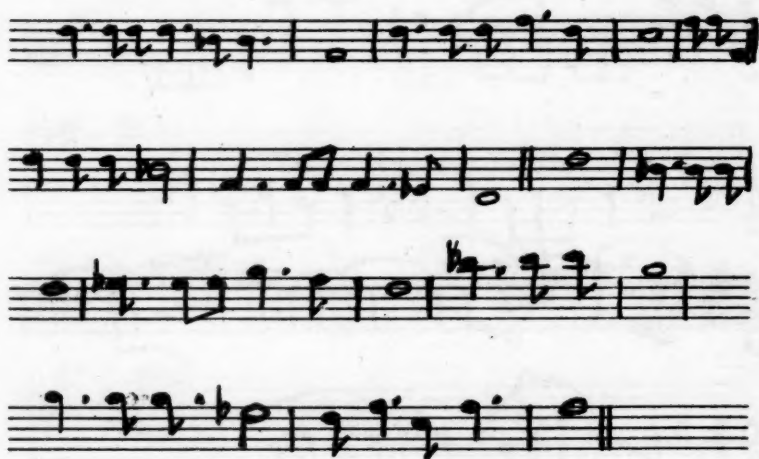
PHASE 1

PHASE 1 AND PHASE 2 ARE PRESENTATIONS OF THE SAME PASTORAL SCENE. THE FIRST IS AN IMMEDIATE RECORD OF THE SPONTANEOUS RENDERING OF THE SCENE. THE SECOND IS THE SAME THEME, ARRANGED IN A DEFINITE MUSICAL PATTERN.



PHASE 2

MOTHER WITH BABE IN THE CRADLE, ROCKING IT
IT TO SLEEP



PHASE 1

THIS IS A FRAGMENT OF A LONGER IMPROVISATION. THE PLAYER
COULD NOT FIND INSPIRATION IN THE THEME. IN THE SMALL
PASSAGE RECORDED HERE THE TIMING IS UNEVEN.



PHASE 2

FINAL STAGE OF A COMPOSITION

poco rit e dim. *pp a tempo*

THIS IS A FRAGMENT FROM A LONGER COMPOSITION WHICH DEVELOPED FROM AN IMPROVISATION. THE SARDONIC DEFIANT WORDS WHICH INSPIRED THE MUSIC ARE ADEQUATELY PORTRAYED.

of such motor images has a negative effect. It increases his momentary anxiety and becomes eventually a contributory factor in the process of trembling. On the other hand, his unusual sensitivity for motor images accelerates and improves his spontaneity, especially in numbers which demand a maximum of dynamic musical energy. In pianissimo passages a certain surplus of motoric activity cannot be consummated. This explains the varying degree of successful adjustment to his instrument even in the spontaneity test. For the patient physical starters are better binders in the process of integration than mental starters.

The trembling is a form of musical stuttering. It can be classified as a performance neurosis or as a neurosis of creativity. It is not stage fright. Many times the patient is calm and confident before the performance. The attack comes suddenly while playing, out of the blue sky, as he describes it. The constellation of his symptom is the product of many factors. Two of the factors are produced by the organization of the cultural milieu in which he lives, a maladjustment to the violin and a maladjustment to musical conserves. These factors are linked to a peculiar development of his creative ego, a surplus of motor images which find an easy outlet in spontaneity work but do not so easily find an outlet in the playing of musical conserves.

Treatment

I devised a method of treatment which is a method of direct action. Instead of removing the patient from reality into an analytic situation we tried to live with the patient through the actual performance. The patient is with his violin in the therapeutic theater. He sees before himself a miniature audience whose constellation is changing from time to time. He is treated in an atmosphere which is free from hypothetical situations, symbols, complexes and traumatic experiences. In other words the psychoanalytic technique is replaced by a psychodramatic (and psycho-musical) technique.⁴

4. The movement away from the psychoanalytic to the psychodramatic technique of treatment started in connection with the spontaneity theater (Stegreiftheater) in Vienna, 1921.

The understanding of a successful performance is possible through an understanding of the factors which contribute to an unsuccessful performance: The patient plays smoothly; suddenly certain anxieties begin to creep in. He feels it all over his body, in his head, in his breath and in his finger tips. His mind is a blank. After a fraction of a second, it is filled with fear. He is helpless against the rapidly oncoming disaster. But he has to go on playing. He tries to fix his attention on the bow, on the fingers, or on the notes before him. But the anxieties are stronger and quicker than his efforts at control. The harder he tries the worse it becomes. The images of fear are associated with other images of fear. Before he realizes it they have spread and dominated his mind. They come in immense rapidity. His mind was a vacuum; now it is filled. It had to be filled with images called forth by fear. This seems like a natural process. As long as a patient has nothing in his mental storage which he can instantly throw into this vacuum as a check, he is a victim of what comes up as a stop-gap from his "unconscious."⁵

I remember a man, a rope dancer, who made a living by walking a tight-rope fifty feet high. One night just when he was in the middle of it fear caught him and he fell. He escaped death by a miracle, but he could not do his work any longer. He wanted to go back to rope walking. He did not know how to make a living in any other way. He said: "When I am on the rope again it will happen again." Our patient is like the rope dancer. He walks over the rope every time he plays in

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5. Spontaneous states are of short duration, extremely eventful, sometimes crowded with inspirations. They are a form of time which is actually lived by an individual, not only perceived or constructed. It is methodologically useful to differentiate it from other forms of time and call it spontaneous time. The high frequency of events during spontaneous time units, the crowding with acts and intentions, may be responsible for that peculiar threshold-sensation that they are "coming" from somewhere, from a metapsychological source, from an unconscious. (See Sociometry, Vol. I, page 69.)

the music hall. If the patient is to be saved from an attack something has to come to his rescue at a moment's notice. He has to have something on hand which he himself can use, a technique, a weapon, a procedure upon which he can fall back in an emergency in competition with those images of fear.

The patient began to re-enact a passage of the composition in which he had failed before. He tried to visualize what this musical passage might express. It expressed to him excitement, people running around hastily, a storm, and a hurricane. This is perhaps what the composer also wanted to express. The patient tried to put himself into the position of the composer. He tried to visualize the images which the composer himself might have used in the process of warming up to the creation of this music. Instructions to the patient were: "throw such images into the music as may express its meaning and tempo. You will warm up to your instrument from within and with a suitable energy." These images were to serve as binders and integrators between the violin and the organism. Long before the negative warming up process emerged his mind would be filled with positive feelings and images. Images of fear, whenever they tried to arise, would be checked and rechecked in the initial phase of their development. Such images, if they aid him to sustain his mental balance, would encourage him and even improve the musical value of his play, and be truly therapeutic images. They would have to be selected carefully. They would be different for different musical compositions or from patient to patient. On the basis of such considerations, a program of treatment was constructed.

Those musical compositions during which he had repeatedly suffered bad attacks of trembling in the past were our first concern. A sample of such a piece of music was Chausson's Symphony in B Flat Major, Opus 20. The patient, while rehearsing this piece, tried to discover what meaning this music had for him, the visual images, and the scenes and stories which seemed most appropriate to him as an interpretation. He said: "It is like the beginning of creation. I see rocks, waters, swamps, blossoms and mud, the gradual evolution of beings. It cannot be associated with trivial things. It

is great music." The patient began to warm up to these images and as he began to play he kept on developing these images and holding them vividly in his mind. As he was playing, new images emerged and associated themselves with the old ones. From rehearsal to rehearsal the story which accompanied this music changed. He allowed his phantasy to accompany his musical performance untrammelled. After exercising in this manner for a week he applied the technique to a public performance with great success. He reported: "When I played I saw the beginning of creation as during the rehearsal but, in addition, many new ideas and pictures came to me. The images seemed to carry my right arm and my bow instinctively. I thought the whole orchestra was astonished. The conductor looked at me with amazement and congratulated me afterwards."

The patient recognized gradually that the trembling was not localized in the fingers but that it was spread all over his body, that it was related to the composer of the music, to the men in the orchestra and to the people in the audience. He discovered that in order to prevent the trembling through spontaneity technique, not only his hands had to be spontaneous, but also his whole person, and that it was a good principle to influence other members of his orchestra with his spontaneity and finally to allow himself to be influenced by some of the spontaneity which the composer of the music possessed when he created it. In the course of training he discovered also that pianissimo parts were difficult for him. When he had to play with a long bow he was often not able to hold an image as long as it was necessary. When he played with a short bow the time an image had to last was shorter. States of anger and aggression produced more vivid images and a richer variety than states of sympathy, pity, or charity. Sweet sympathetic trends, as indicated above, had not been sufficiently cultivated in the patient when he was a child. He had received little affection at home, and he had grown up full of protest and aggression.

In the course of training he learned to associate more freely certain images with certain symbols and scenes. Some pictures began to recur which he preferred to others. Experience had taught him that he

could rely upon them. A part which he feared was a prelude to the third act of Tristan and Isolde. In his first rehearsal of this piece he associated the pianissimo with a "child sleeping in a crib and a mother swinging it. The child was ill. Death stood at the window reaching for the child." He made up this story without the knowledge that according to the true story Tristan is mortally hurt by a servant. Tristan comes in a boat to meet Isolde and dies. When he discovered this he tried to adjust the true story to the music. But during the performance he was for a few moments in great distress. Wagner's text as a guiding image did not help him. He produced his own false interpretation and was rescued.

The mental difficulties in the situation of a reproductive musician must reflect some of the difficulties which are inherent in the situation of the composer himself. Beethoven, according to his biographers before and when writing music used to walk up and down through his garden, apparently without direction, making gestures, looking wild and absurd, then stopping as if taking a breath. He improvised with his whole body, trying to stir up the musical associations buried in his mind. He always carried a notebook with him so that he could immediately put down his inspirations.

When a reproducing musician plays a Beethoven concerto on his violin, he is like a psychological double of that Beethoven who gave birth to that music. In the period preparatory to a creative mood visual, motor and sound images play a great rôle in the mind of the composer. These images have, to say, the least, a catalytic rôle in the production of musical creations. Beethoven must have been aroused while writing a particular concerto by a definite pattern of feelings and a definite complex of catalytic images. A reproducing musician may have to come as close as possible to the same feelings which Beethoven had when he created the music but the catalytic images do not have to be the same. The patient, a reproducing musician, is treated as if he were Beethoven. But instead of going from the inspiration up to the finished product he is going from the finished product back to the inspiration. He is a Beethoven reversed. He is ending where Beethoven began. He is in

the position of a creator who tries to weave the process of the concerto backwards not only musically but also psychologically. Anticipating the feelings and the images which Beethoven had he is approaching through the treatment the same relationship to the music as that possessed by Beethoven. Let us imagine for a moment that Beethoven himself has to play the concerto instead the patient. In a general sense he may be closer to his own state of creativity than a reproducing musician. But even Beethoven would not be the same Beethoven he was at the moment of creation. He would be a Beethoven who recreates his conserve. Between Beethoven I and Beethoven II, the reproducer of his own music, there is a gap. Between the person who learns this music, S I and the same person who performs it in public, S II, there are many gaps which may lead to anxieties. But the greatest barriers must be between Beethoven in his spontaneous state (B I) and the public performer (S I). A certain amount of spontaneity is also necessary for the reproductive musician's warming-up process. This is made clear through the discovery that he does not have to imitate the composer literally. He does not have to use the same visual and sound images which the composer himself used when he wrote the concerto. The reproducing musician has been brought up in a different environment from the composer. In a different culture, he may be aroused by different images. In the course of our analysis we move from the musician's performance to the composer's creation--that is, from a low level of creativity to a high level of creativity. For Beethoven, when he composed the concerto, the hundred or more participants of his orchestra were fictitious persons. But for the reproducing musician they are realities. He must cooperate with the members of the orchestra; he must suppress his spontaneity as a musical creator; he must sacrifice his own creative ego to the creative ego of the composer.

The aim of our training is to arouse and increase the spontaneity of the reproducing musician. Therapeutic images are simply one method which can be used to advantage. Other methods are possible, but the aim is in all cases the same. The method of activating images is only a crutch to aid the musician or the pupil in the process of learning to be spontaneous. In the course of

training the patient had to learn how to free himself gradually from the use of images which were intended merely as musical starters. In the first phase of training some persons accompany their playing with a continuous mental picture. After a certain amount of training they have for long stretches no images at all, at least not consciously. Often the first image has been a strong starter and is pushing and carrying the playing for a long period. Until the intensity of this starter begins to ebb a new image may have to arise to give a new push. The continuous moving picture is replaced by a number of signals. In later phases of training the patient learned to be sufficiently aroused by strong images before the beginning of a concerto and finally he was able to remove every tangible content or image from the warming-up process. The only guide remaining was an intense feeling. During the training the patient learned how to replace strong images by weak images, whether visual or motor. His play retained the same feeling of spontaneity. First he started with visual images because he preferred them; gradually, he began to use motor images and then he learned to transform non-musical images and associations into pure musical images and associations. A musician may not have the same vastness of musical inspirations as an original composer but he is never entirely void of them.

One of the chief characteristics of the warming-up process is that it accelerates and slows up states of feeling, ideas, images, etc., which emerge in association with them. The warming-up process exists in every performance of the human organism--eating, walking, thinking, and social activities. Patients whose warming-up process in regard to one or the other function is slowed down try to accelerate it themselves, either through auto-suggestion or through psycho-chemical starters--such as coffee or alcohol. The patient, for instance, reported that alcohol stimulated him when he felt well. But if his feeling was disturbed and he thought that the trembling was coming, alcohol made the performance still worse.

In the case of neurotic and psychotic states the warming-up process is slowed down to such a degree (the extreme is the catatonic state) or increased to such a

degree (the extreme is the manic state) that normal acts are distorted or replaced by pathological symptom formations. Two types of therapy are suggested by the study of the warming-up processes--treatment of pathological slowness and treatment of pathological rapidity, correspondingly, a training of spontaneous slowing up and of speeding up is often required. The question is to determine experimentally the range of normal frequency of warming-up processes, a normal threshold for slowness and a normal threshold for rapidity. The person who produces neurotic symptoms tends towards very low or towards very high frequency of psychological associations. We have attempted to measure systematically the spontaneous duration of states of feeling of normal and pathological individuals in the essential life situations. It can be safely predicted that statistical averages will be found for the spontaneous duration of specific performances.

The problem of adequately stimulating a patient so that he warms up to a performance has led to the study of starters. The therapeutic images which have been helpful to this patient as well as to many other patients suffering from a performance neurosis are also types of starters. We have discussed physical starters, mental starters and psycho-chemical starters (coffee, alcohol, various drugs, also metrazol and insulin fall into this category). Another stimulus starting a person to a performance is the "economic" starter. The patient complained that he was not able to get a certain composition done if it was to be finished within a definite period of time. If the publisher had given him a "deadline," he postponed the job until the last moment; when he tried to rush it but couldn't make it. Then he could give up the work, saying, "It is too late. It cannot be done." He claimed that if he had been allowed to work when he liked he would have written it long ago. This behavior indicates another variety of the patient's maladjustment to the musical conserve. The economic starter, however, arouses different responses in different people. As there are fast groups, fast workers, fast eaters, there are also slow groups, slow workers, and slow eaters. In the realm of creativity, there are fast and slow creators. Writers, poets, composers begin many more works than they can finish. An important

work may remain unfinished because its creator is inclined to drag his warming-up process on and on so that he misses the psychological moment for ending the work. It is here that the economic starters play a catalytic rôle. The great effect of contract and piece work in manual labor for accelerating production is taken as a matter of course. The influence of this factor upon workers in creative fields has been neglected. The enormous production of the great masters of the renaissance is not so much related to a greater productivity than many modern artists possess, as to the fact that certain nobles of that period assigned them to a certain task to be finished in a given time--a contract work.

Spontaneity Training

The patient presents a paradoxical situation. He acts like a sick man when he has to play a piece of music which he has carefully prepared and rehearsed and which another mind has composed. But he acts in a triumphant manner (exuberant and healthy) when he creates spontaneously on his instrument, although he has to compose as he goes on playing and deprives himself of the advantage of careful preparations. He acts like a child who wants to play instead of going to school. Parallel to his maladjustment to musical conserves goes an overflow of spontaneous creativity enhanced by an exhibitionistic tendency. Many patients of this category offer the reverse picture. They fear to be free and left to their own devices. They do not like to create spontaneously. They are over-adjusted and cling anxiously to the cultural and social conserves to which they are bound.

We described the patient's performance as an outgrowth of his creative ego in struggle for a spontaneous existence and prescribed, as an antidote, systematic spontaneity training. Such a training provides a true paradise, a nursery to his creative ego. It frees him from the fetters of musical conserves until his creative ego is more mature and able to integrate his creativity and musical conserves more successfully. The therapeutic theater is a place in which the rigid music teachers of his childhood are replaced by a number of "auxiliary

egos," physicians, artists and musicians who encourage and guide him. Such stages of his spontaneous creativity which are dormant and have remained rudimentary are awakened and articulated by a graduated spontaneity training. The problem is to integrate within one and the same personality spontaneous creative trends with the task of concert master of musical conserves.

The patient undergoes several stages of spontaneity training. The first and simplest stage of exercise is unorganized chaotic violin playing. The point is that musical notations have to be as far as possible disregarded, not only before him but in his mind. It is a sort of musical relaxation, a gradual descendance to a non-semantic level of acoustics. The patient plays without thinking in musical terms. He eliminates from his mind gradually all musical forms he has learned. It is never complete. He puts them into brackets. His fingers pass over the strings. He does not care whether the sounds make music or not. It looks as if he relies on his fingers and not on his intellect. In these exercises the patient does not have any trembling and shaking. He does these exercises daily for a few minutes. The purpose of these exercises is to help him overcome anxieties and tensions. They arouse a new effort for the cementing of the simple relationship between an organism and an outside tool; they foster the process of integration between them.

The next stage is an exercise in true musical spontaneity. In the beginning no theme, no key and no tempo are suggested. They come from him. Later in the training, he is gradually restrained by a theme given by the instructor. Still later, keys and tempos are suggested. Finally, a theme is subdivided into successive moods. This spontaneous training in music parallels the training of feeling qualities which are in him deficient--for instance, his feeling of pity and sympathy.

In the course of more than fifty sessions, his creative ego matures to a considerable degree of stability and productivity. In the beginning, his improvisations last only a few minutes. Later it is easy for him to improvise for half an hour or more, solo and accompanied. He warms up rapidly. After a few moments of

thinking he chooses a theme and perhaps the key. Then the music carries him. He originates during the training many musical ideas which become later the basis for compositions.

A phase in the disciplining of his spontaneity is to give musical interpretations of pantomimes and plays which are performed on the stage simultaneously. These particular exercises have value for the patient because he learns to adjust his spontaneity to acts and movements of other persons. It is like being spontaneous in a group of persons who themselves are spontaneous toward one another. It is unpredictable how they may act the next moment but he has to adjust his music to them. It is a method of how to make spontaneous behavior disciplined and orderly. Through this procedure more and more hindrances and resistances can be interpolated until the spontaneous player learns to assimilate the greatest barriers, musical conserves, without a serious handicap to his spontaneous creativity. After a successful adjustment to conserves, the patient has one more task to meet, the adjustment to his orchestra. The patient is placed into a group of musicians whose task is the gradual development of a spontaneous group orchestra. An artistic technique which I developed many years ago becomes here a sort of group psycho-therapy.⁶ Improvisation by one individual is comparatively simple but musical improvisation by a group is more difficult. It is a problem in social creativity. In my first group experiments, the participants started blindly relying only upon the ear without any preconceived idea of how to cooperate. They have to learn what methods of cooperation are necessary. One method of cooperation is called musical transference. The conductor or the player of the first instrument suggests the tempo which is common to

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6. "Group therapy treats not only the individual who is maladjusted, but the whole group of individuals who are interrelated with them." (See bibliography #3, page 310 and page 429; see also #2, page 60.) When the terms group therapy and group psychotherapy were coined by the author, the aspect of musical production was not considered. His experiments with the spontaneous group orchestra (see bibliography, #3, page 7) made possible wider application of this term.

all. Then the leadership during a production migrates at intervals from one instrument to another. At times musical transference is replaced by a verbal transference in which a theme subdivided into scenes is given to the group as an initial inspiration.

ORCHESTRA

Summing up, we see that a gradual disappearance of the trembling of the patient was brought about. First, the deeper roots of his illness were established. Second, the rediscovery and maturing of his creative ego was attained through spontaneity training. Third, the gradual adjustment to the violin followed. Fourth, through the technique of therapeutic images, his psychological and artistic relationship to musical conserves became more deeply integrated. Fifth, through the technique of spontaneous group orchestra, the way was paved towards a better mastery of his task to perform as concert master of a symphony orchestra.

CONCLUSIONS

A frame of reference, a norm of cultural values, is the spontaneous creativity as manifested or failing to be manifested in every phase of a given culture. Through the means of spontaneity tests and the analytical approaches derived from them, the creativity states of a culture can be studied and the pathological deviations from the norm determined.

The states of spontaneous creativity can be used as a measure of the constellations of any culture, the amount and the degree of their spontaneity (quotient of spontaneity).

The result of such an analysis of cultures would be a scale of cultural patterns ranking from the one extreme, the conserving types, to the other extreme, the spontaneous types with many intermediary stages.

Just as spontaneity training can be used effectively as a corrective therapy for specific individuals living in the milieu of a conserved type of culture, it should be still more helpful as a corrective for a whole culture which is transplanted to a spontaneous milieu.

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A SOCIOGRAMMATIC STUDY OF OEDIPUS COMPLEX
FORMATION: D. H. LAWRENCE'S SONS AND LOVERS

C. N. Allen and K. Curtis '39
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SYNOPSIS

This is a brief study of a classic of modern literature which is also the partially-autobiographical revelation of how a man becomes psychologically enslaved to his mother. This is the Oedipus complex of the Freudians, brought to full consciousness, but now studied in the frame of reference provided by Dr. Moreno and his sociogrammatic technique. It has an advantage other case analyses lack: we are able to visualize the development and relationship of the various actors in the play at any moment or within any interval.

This article, after stating its purpose with the help of a quotation from Dr. Moreno's book, outlines the essential story of Sons and Lovers by a letter of the author. Then the sociogram is presented and the narrative is summarized with liberal quotations from the book and with reference to the sociogram to make two-way reference between book and sociogram easy.

So far as known, this is a new application of this useful technique. Its value to teachers of abnormal psychology, of which the senior author is one, would seem assured whether for personal study or for classroom use.

"Complex patterns of social structure are built from simpler ones by increasing the number of individuals, increasing the qualities of interest which each has for the other, and so increasing in the final analysis the capacity for bringing about the results of a

social nature. These emotional cross-currents....may be attractive in their function or they may be repellent, so that every individual in the group feels the pull of the emotional interests of his fellows and the pressure of their repulsion. These currents not only flow as between individuals who are differently located and thus have a spatial pattern of distribution, but they also flow as between individuals of different degrees of development and thus have a temporal pattern of distribution."¹

It is mainly this temporal pattern which we shall trace in the autobiographical Sons and Lovers. D. H. Lawrence has left us a letter in which he states the theme, as follows:

"It follows this idea: a woman of character and refinement goes into the lower class, and has no satisfaction in her own life. She has had a passion for her husband, so the children are born of passion, and have heaps of vitality. But as her sons grow up she selects them as lovers--first the eldest, then the second. These sons are urged into life by their reciprocal love for their mother--urged on and on. But when they come to manhood, they can't love, because their mother is the strongest power in their lives, and holds them. It is rather like Goethe and his mother and Frau von Stein and Christiana--As soon as the young men come into contact with women, there's a split. William gives his sex to a fribble, and his mother holds his soul. But the split kills him, because he doesn't know where he is. The next son gets a woman who fights for his soul--fights his mother. The son loves the mother--all the sons hate and are jealous of the father. The battle goes on between the mother and the girl, with the son as object. The mother gradually proves stronger, because of the tie of blood. The son decides to leave his soul in his mother's hands, and, like his elder brother, go for passion. He gets passion. Then the split begins to tell again. But, almost unconsciously, the mother realises what is the

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1. From the preface by Dr. W. A. White to Who Shall Survive?, by J. L. Moreno.

matter, and begins to die. The son casts off his mistress, attends to his mother dying. He is left in the end naked of everything, with the drift towards death.

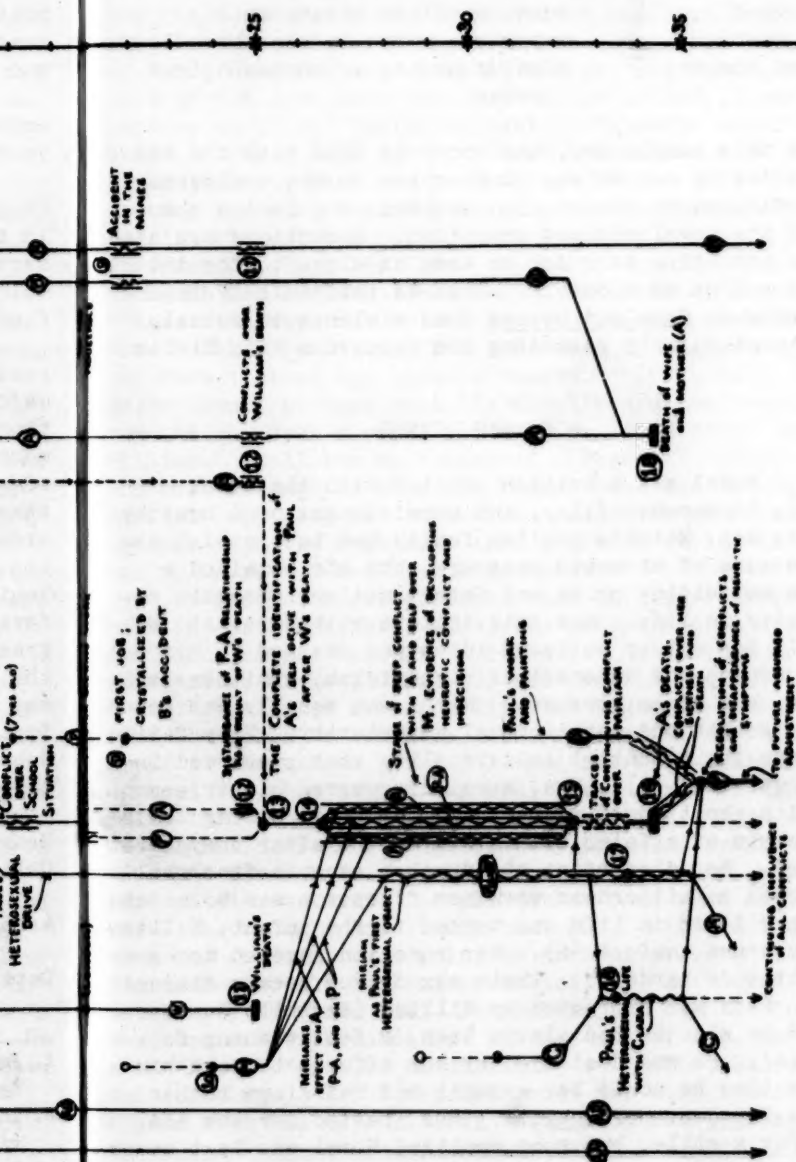
"It is a great tragedy, and I tell you I have written a great book. It's the tragedy of thousands of young men in England....."²

It is the tragedy of a growing man whose mother aroused in him, to full consciousness, the passions normally reserved for a beloved wife. It is D.H.L.'s own story, told eight years later: a heroic effort of a sex-crucified man to free himself from a strangling past.

This epic of the Oedipus complex lends itself readily to the sociogram form. Sociograms have two major advantages. First, a very complex series of relationships can be reduced to a relatively simple form, much as elaborate research data can be summarized in a single table or graph. Secondly, the stresses and strains of social situations can be graphically shown in order to see whatever patterns of behavior emerge from the related details. In short, the sociogram is a convenient, graphic method of studying personality in its developing social relationships. The accompanying sociogram relates to the family life, from the marriage to the death of his mother, Mrs. Morel. This tells only one side of Lawrence's complex nature; we do not mean to imply that the picture is either complete or wholly fair. Subsequent books reveal Lawrence in quite different lights.³ The key to our sociogram is as follows:

Heavy vertical line:	development of a major character.
Oblique line:	influence of one upon another character.
Arrow:	direction of attraction and repulsion.
Dotted line:	tenuous situation or background developments.

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2. From a letter to his friend Edward Garnett, written from Italy, November 14, 1912.
 3. The most recent of these is A Poet and Two Painters, by K. Merrield, one of two Danish painters who spent several months with D.H.L. and his wife apart from all others in Mexico.



Wavy line:	acute conflict situation.
Solid circle:	important event in the chronology.
Circled number:	a major event; in chronological order.

Beyond this simple key, the story is told with the aid of the following narrative. References to the sociogram are indicated by the circled numbers, and follow the order of the novel without exception. Quotations are used in the narrative in order to keep as close to the intent of the author as possible. This is particularly important because Sons and Lovers does violence to actual fact, particularly regarding his relations with Miriam.

SONS AND LOVERS

Morel was a British collier with the quick warmth, irresponsibility, and carelessness of a healthy animal; Mrs. Morel's puritan family had lost social status because of economic pressure, but she retained a fierce unyielding pride and determination to regain superiority in life. She fell in love with Morel at a dance: her colder world-of-ideas was charmed by his sensuousness and unconscious romanticism, limitless vitality, and clean strength. Morel was equally attracted by her polish and intellectual superiority. They failed to sense the essential individuality each preserved in their marriage (1). Mrs. Morel discovered his irresponsibility about money matters and deceit in hiding the true state of affairs within six months after they were married. Her disgust at his drunken escapes-from-reality turned to bitterness when her first son was born: she lost her faith in life and turned to the infant, William, for love and comfort (2). Her reaction angered Morel and his attitude hardened. Their sex drives became dissociated: hers was attracted to William (3) while Morel returned to what he had always been, a fellow among fellows (4). He was destroyed by her efforts to make him better than he could be; a moral and religious rather than a sensuous personality. She fretted for the old love for a while, but soon realized Morel was fast becoming an outsider to the family life. She determined that

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her children should be her salvation and live for her the life she had hoped might be her own. When Paul--who is D. H. Lawrence--was born (5) (Sept. 11, 1885), "A wave of hot love went over her to the infant....she would make up to it for having brought it into the world unloved." (Page 46)⁴ The children learned to hate their father, and to make him feel an outsider. "His wife was casting him off, half regretfully, but relentlessly; casting him off and turning now for love and life to the children." (Page 48) Paul was delicate and quiet and clung to his mother; sometimes he had fits of depression. "These fits were not often, but they caused a shadow in Mrs. Morel's heart, and her treatment of Paul was different from that of the other children." (Page 60) The major theme, at this time, is Morel's drunken brutality and the children's repulsion of him. "'Father!' repeated William. 'Call him my father!'" (Page 72) There was one more attempt to mend the broken home and to regain marital happiness (6)--when Paul fell sick with bronchitis and with the knowledge that a fourth child, Arthur, was to be born. But it did not last.

Morel was disappointed when William refused to work in the mines; Mrs. Morel was determined on a more ambitious career for her first-born. So William went to work, first at Nottingham (7) and then in London. He wrote and visited occasionally, but began to neglect to send the money he had been proud to send his mother but spent it on trifles for a girl neither well-suited to him nor for whom he had any real love. Mrs. Morel naturally turned more than ever to Paul (8) as a love-object of her sex drive now progressively thwarted by her husband and first-born. Paul's first opportunity to be a more vital substitute for his father came when careless Morel was brought home badly hurt (9). All the indecision and conflict over going to work disappeared in the fourteen-year-old boy and he crowed, "'I'm the man of the house now.'" (Page 106) As when he had been forced to make contact with school at seven years of age, he now went through "agonies of shrinking self-consciousness" at twice the age. His first interview was a nightmare he shared with his mother. His indecision was intense, but

4. All page references are to the Modern Library edition, 1922.

finally it was decided that he could work in Nottingham and spend his nights and week-ends at home. Night after night he painted by the fireside while his mother enriched him with ideas from her fertile mind. "Mrs. Morel clung now to Paul. He was quiet and not brilliantEverything he did was for her." (Page 137) The occasional upsets which followed every letter from William were the only interruptions in their close relationship.

The normal friendships of adolescence came late for Paul, beginning in casual walks with his mother to see friends at Willey Farm. Here he met Miriam (10). For a time things went on casually--until William died (11). (Page 162) The strain of readjustment was terrible for both Paul and his mother (12). When Paul contracted pneumonia, "His mother lay in bed at nights with him; they could not afford a nurse. He grew worse, and the crisis approached. One night he tossed into consciousness.....'I s'll die, mother'.....He put his head on her breast, and took ease of her love. 'For some things,' said his aunt, 'it was a good thing Paul was ill that Christmas. I believe it saved his mother.'" (Pages 167-168) Another result was that Morel reacted to the conflict over William's death by showing some gentleness to his wife (12). But it is clear that this was the last gesture and that Mrs. Morel had made a complete identification of her sex drive in Paul (13) and that a long period of turmoil had ended.

The death of William (11) is the turning point in Sons and Lovers, and as regards the formation of the Oedipus complex it is crucial for now we find Paul and Mrs. Morel spiritually as one. The mother has completely absorbed her son; she had lived through painful retreats from successive thwartings by her husband and by her first-born son, and Paul remains her one comfort and hope. But now the sixteen-year-old psychologically-chained Paul sought other friends at the Willey Farm. Mr. Leivers was lazy, unimaginative and unperceiving; his wife was an ineffectual, complaining, over-religious introvert; three sensitive sons compensated for isolation and curiosity about life by seeming to be rough and boorish; Miriam reflected her mother's religious attitudes and her brothers' roughness by a shyness and sensitivity to life as she saw it from her low position as Cinderella

in the household. "Her great companion was her mother." (Page 169) who taught her to turn the other cheek and to daydream romantic escapes. Miriam intruded herself into Paul's visits to her brothers and found a common bond with him in their love for nature. "So it was in this atmosphere of subtle intimacy, this meeting in their common feeling for something in nature, that their love started." (Pages 176-177) For about three years this adolescent idyll progressed: now with joy, now Paul upset her intensity of emotion in contrast to his mother's reserve (Pages 181-182), and again an undercurrent of mother-jealousy he could not understand (Page 190). (14) "The intimacy between them had been kept so abstract, such a matter of soul.....'We aren't lovers, we are friends,' he said to her.....Then if she put her arm in his, it caused him almost torture. His consciousness seemed to split. The place where she touched him ran hot with friction." (Pages 204-205)

Here the tragedy-within-a-tragedy comes to sharp focus again. Two neurotic children are unable to make normal adjustments to each other because each is chained to a thwarted mother. Paul saw Miriam in terms of his mother: he disliked her intensity, resented her humbleness, sought her criticisms of his art, and fought with the growing awareness that she aroused him sexually. Miriam saw herself as a sacrifice to one whom she loved very much despite sensed weaknesses of personality in a man who seemed to think her unworthy. Paul feared her eagerness for his soul would suck him dry. "Mrs. Morel hated her for making her son like this. She watched Paul grow irritable, priggish, and melancholic." (Page 212) The "strife in love" is detailed endlessly. Instinctively he realized he was life to her. And after all, she was the chief thing to him, the only supreme thing. "Mrs. Morel reproached him: 'I can't bear it. I could let another woman--but not her. She'd leave me no room, not a bit of room.....And I've never--you know, Paul--I've never had a husband--not really.'" (Page 251) Miriam was defeated. She had given everything Paul had asked and was ready to give more. But he denied her: "I can only give friendship--it's all I'm capable of--it's a flaw in my make-up." (Page 260) "He had come back to his mother (15). Hers was the strongest tie in

his life.....It was as if the pivot and pole of his life, from which he could not escape, was his mother." (Pages 261-262) He told her he should never marry anyone,--and so he turned to an older woman for friendship. "This was the end of the first phase of Paul's love affair. He was now about twenty-three years old,⁵ and, although still a virgin, the sex instinct that Miriam had over-refined for so long now grew particularly strong. Often, as he talked to Clara Dawes, came that thickening and quickening of his blood....warning him that sooner or later he would ask one woman or another. But he belonged to Miriam." (Page 296)

Clara Dawes was five years older than Paul, unhappily married, physically very attractive, and with none of the spirituality of Miriam. Despite continued conflict--he sensed his mother's disapproval, felt himself still chained to Miriam, and knew Clara did not measure up to his mother-ideal--Paul became sexually intimate with Clara (16). "He was like so many young men of his own age. Sex had become so complicated in him that he would have denied that he could ever want Clara or Miriam or any woman whom he knew....He loved Miriam with his soul. He grew warm at the thought of Clara.... and yet he did not positively desire her. He would have denied it forever. He believed himself really bound to Miriam." (Page 323) And so he came back to make the test of his heterosexuality on Miriam (17). "He told himself it was only a sort of overstrong virginity in her and him which neither could break through....It lay in the physical bondage. He shrank from the physical contact." (Page 327) And "....she dreaded the issue with him." But the test came--and brought happiness for neither. "His heart was down, very heavy. Now he realized that she had not been with him all the time, that her soul had stood apart, in a sort of horror. He was physically at rest, but no more." (Page 337) But she loved him dearly. When opportunity left them alone together, they tried again to find love in passion. "She was very quiet, very calm. She only realized that she

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5. There are several inconsistencies in the chronology of the book. The sociogram and this narrative are as accurate as we can make them with the book as sole criterion.

was doing something for him. He could hardly bear it. She lay to be sacrificed for him because she loved him so much. And he had to sacrifice her. For a second, he wished he were sexless or dead.....And afterwards he loved her--loved her to the last fibre of his being. He loved her. But he wanted, somehow, to cry. There was something he could not bear for her sake." (Pages 340-341) But Miriam was again defeated. "For one day he had loved her utterly." But it never came again. The sense of failure grew stronger--and he sought out Clara once again. Now he hated Miriam (Page 344) and told her they ought to break off their friendship. In her hurt, she became angry and told him that instead of being twenty-four years old he acted as if he were only four. (Page 348) "He sat still, feeling as if he had had a blow, instead of giving one. Their eight years of friendship and love, the eight years of his life, were nullified." (Page 350) And so another chapter ends.

Paul was twenty-four when he confidently said, "Mother....I s'll make a painter that they'll attend to." (Page 354) Here was compensation for a tormented soul. His return to Clara and passion was futile, and so he returned to Miriam again to talk about Clara and about ideal marriage. "Miriam pondered this. She saw what he was seeking--a sort of baptism of fire in passion, it seemed to her. She realized that he would never be satisfied till he had it.....Well, then, if he must go, let him go and have his fill. At any rate, when he had got it....he would want the other thing that she could give him." (Page 373) Paul brought Clara home to his mother, but Mrs. Morel measured herself against her rival and found herself the stronger--and so accepted her where she had rejected Miriam. And she was right, for sometime later when discussing marriage Paul admitted loving Miriam and even of loving Clara; "but to give myself to them in marriage I couldn't.....They seem to want me, and I can't ever give it to them.....And I never shall meet the right woman while you live." (Page 412) He continued to satisfy his lust with Clara. "But then Clara was not there for him, only a woman...." (Page 414) "In the spring they went together to the seaside....and lived as man and wife." But Clara also failed to make Paul love her. (There is an aside in the

book, referring to Baxter Dawes, who was Clara's abandoned husband. Lawrence traces a secondary story of their rivalry and subsequent friendship.)

Mrs. Morel still held Paul, and she was dying of cancer--as they both knew. He was torn in several directions. "A furious storm, he knew not what, seemed to ravage him." (Page 452) Sometimes he returned to Clara for passion, but without happiness for either. "She began to have a kind of horror of him....He wanted her--had her--and it made her feel as if death itself had her in its grip.....There was no man there loving her. She almost hated him." (Page 453) Another visit to the seaside was spoiled by his anxiety for his sick mother. And when at last she died--hurried by an overdose of a drug given by Annie and Paul--the release brought another storm (18). "He kneeled down, and put his face to hers and his arms around her: 'My love--my love--oh, my love,' he whispered again and again....." (Page 466) The neurotic conflict and indecision was forgotten in overwhelming grief; the sense of release came only later. For a time he wanted to die. "He would not admit that he wanted to die, to have done....So the weeks went on. Always alone, his soul oscillated, first on the side of death, then on the side of life, doggedly. The real agony was that he had nowhere to go, nothing to do, nothing to say, and was nothing himself." (Page 482) He was a derelict.

Sons and Lovers carries the neurotic conflict to the very end. After willing to live, Paul once more put himself to the test by asking Miriam to marry him, but without spirit. Her refusal leaves him facing an unknown future with only a wistful memory of his mother-ideal.⁶

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6. For the sake of closure we may note that Lawrence gave up his work (he had actually been a schoolmaster at Croyden) after his health was shaken by the death of his mother. He wished to close the book of the past. In 1912 he interviewed a man about a lectureship--and fell in love with his unadjusted wife. Her book, Not I But the Wind...., tells us that "He said he had finished with his attempts at knowing women.....We talked about Oedipus and understanding leaped through our words. After leaving that night....he wrote me, 'You are the most wonderful woman in all England.'.....Suddenly I knew I loved him. He had touched a new

(Miriam's very different story is well-summarized by Kingsmill's biography.)

One final comment seems necessary. The details of the Freudian theory of the Oedipus complex formation are disputed by G. W. Allport⁷ in the following words:

"It is obvious that the prime factor in the development of any personality is the influence of other personalities. Of all the people who affect this development, in general the parents do so most poignantly. Psychological studies have failed to find any significant tendency for children to prefer the parent of the opposite sex (as Freudian theory assumes). Rather, both boys and girls as a rule have a greater fondness for their mothers.....And whether this affective attitude toward them is positive or negative, the parent-image affects him enormously; and he never escapes from it.....If a reaction against the codes and customs of the older generation has taken place, there is in effect a negative imitation, a protest, which just as certainly shows the potency of the parent-image. Especially in attitudes toward the opposite sex does the image (and therefore the parent) play a rôle. Men often choose wives in subtle ways like their mothers.....Women choose husbands like their fathers in equally subtle ways.....Men often resent in their wives any departure from the mother-image."

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(Footnote continued) tenderness in me. After that, things happened quickly.....'You must tell him the truth, and we will go away together, because I love you.'"

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THE J-CURVE HYPOTHESIS: A REPLY TO DICKENS
AND SOLOMON

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In an earlier issue of this Journal (4), I raised a number of questions concerning the J-curve hypothesis because I felt that the J-curve should be more adequately defined, and because certain data presented by Allport (1), and by myself (3,4), do not confirm the hypothesis. More recently Dickens and Solomon (2) have taken exception to certain of my suggestions and criticisms and have sought to clarify Allport's and their own position. There are certain points, however, which need further clarification. I shall deal with the criticisms presented by Dickens and Solomon in the order in which they make them.

THE SINGLE-J-CURVE

1. The 50 Per Cent Limit of Conformity

First, Dickens and Solomon insist that the 50 per cent limit of requisite conformity is not essential in a definition of the J-curve. I maintain that since Allport has included it in his hypothesis, it must also be included in the definition of the J-curve. To get this problem clearly before us, we shall trace briefly Allport's line of reasoning as it is presented in his article (1).

Before defining his hypothesis, Allport clears the ground as follows: "Before attempting a formal statement of the J-curve hypothesis," he says, "we are brought finally to the necessity of a clearer definition of the field with which this hypothesis deals. We have spoken in our preceding discussion of three necessary factors. First, there must be a clearly recognizable, unequivocal purpose..... Second, there must be some

kind of law..... Third, a fairly large proportion of the population studied must do this prescribed act." (1,p. 158) Near the close of his discussion of the third factor, he asks: "What proportion must fully conform before we can have a societal situation to which our hypothesis of the J-curve of distribution can be applied?" (1,p. 160) Perhaps we should note here that he is raising a question as to when the hypothesis "can be applied" not when one can predict that a J-curve will result. I do not seem to find that Allport places emphasis on the prediction of J-curves as Dickens and Solomon state (2,pp. 279-280). Continuing his discussions, he observes that from his empirical data, "It seems justifiable, therefore, to accept the 50 per cent limit as our tentative criterion for requisite conformity." (1, p. 160) Therefore, "a field of conforming behavior may be said to exist when one-half or more than one-half of the individuals included are performing an act which, in the form in which they do it, has been 'prescribed' or deemed proper according to some rule which has been formulated or implicitly recognized for accomplishing a definite purpose." (1,p. 161) Finally he formulates his J-curve hypothesis: "In a field of conforming behavior, the distribution of degrees of conformity upon their appropriate telic continuum is in the form of a curve of positive acceleration." (1,p. 161)

From this it seems quite clear that the only time the J-curve hypothesis "can be applied" is in a field of conforming behavior, and that exists (according to definition) only when there is 50 per cent or more conformity. This being the case, it seems to me that Allport's discussion is concerned only with J-curves that show 50 per cent or more conformity, not with J-curves in general, and hence if we are to define his J-curve (not the J-curve hypothesis) we must include the 50 per cent limit he imposes.

2. The Positive Acceleration of the Curve

Under the caption "clarification of positive acceleration," Dickens and Solomon present a lengthy discussion of J-curves, which includes inconsistent and inadequate definitions from various authors, and finally conclude that there may be three general types of J-

curves: those that are (1) positively accelerated, (2) negatively accelerated, and (3) a mixed type, that is, both positively and negatively accelerated. This discussion is beside the point since we are concerned only with Allport's concept of the J-curve which very definitely states that the curve is of positive acceleration. That other investigators define it more generally is of no import here.

Solomon and Dickens also seem to have missed the point concerning the mathematical formula I suggested as a possible description of Allport's J-curve. They ridicule the idea that an empirical distribution could ever be obtained which would fit the suggested formula. Dickens and Solomon seem to forget that any curve can be described mathematically just as the normal probability curve has been (5, p. 108), and that such definitions are desirable for psychometric reasoning. I readily agree that one would rarely, if ever, deal with an obtained distribution which would fit exactly the formula I have suggested, and yet this does not mean that the formula is valueless. Has anyone obtained a distribution of data which was perfectly normal? Probably not, and yet a fair share of our psychometric reasoning is based on the normal probability curve and its properties. No one is eager to dispense with the Gaussian curve just because obtained distributions do not fit it perfectly.

Again Dickens and Solomon point out that the acceleration of a curve may be uniform or variable. With this I agree and further admit that my suggested formula recognized only uniform acceleration. Since my formula was only a suggested formula for defining the J-curve, Dickens and Solomon might have seized the opportunity to improve upon it instead of dismissing it. Since the 50 per cent limit of conformity was so readily determined from empirical data, surely a fixed or variable numerical value for r (ratio), to be supplied in the formula for positively accelerated curves, could also be found.

Let us venture an hypothetical case which may illustrate some of the implications of a formula. Suppose that we observe two groups of people who show the same type of conforming behavior, and find that the acceleration in the curve formed by each is quite uniform (as Dickens and Solomon admit may happen), but that the r or

ratio in the one group is 2 and in the other 4. Thus the rate of acceleration gives us an index, which describes the whole distribution, and which may be compared with the index obtained for another group. Such a comparison certainly reveals more about the institutional conformity of the two groups than if we should merely say that 75 per cent of the one group and 51 per cent of the other completely conform. The latter comparison includes only a part of each group and tells us nothing about the distribution of the other members in each population, whereas the former immediately describes the entire distribution. For this reason I firmly believe that should someone determine, either empirically or theoretically, mathematical formulas for J-curves, of uniform and variable acceleration, as I have suggested, we would be taking a step which would enable us to describe and understand institutional behavior.

THE DOUBLE-J-CURVE

1. Dickens' and Solomon's Criticism of Allport

After some discussion of obtained double-J-curves, Allport defines his hypothesis as follows: "In any field of conforming behavior (see definition previously given) the distribution of measurable variations of that behavior upon a relevant, but empirical, or non-telic, continuum is in the form of a steep, uni-modal, double-J-curve (that is, a curve having positive acceleration of both slopes), in which the mode is likely to be off-center, and the slopes are likely to be asymmetrical. The distribution, in other terms, is 'leptokurtic,' and probably asymmetrical both in area and in range." (1, p. 166) Dickens and Solomon criticize Allport for using the two terms, "steep" and "leptokurtic." These, they feel, limit the definition unduly. They apparently would favor a more general definition in which a double-J-curve would be defined as one whose slopes are positively accelerated throughout, and which is uni-modal and somewhat skewed.

We must grant Allport the right to define terms as he sees fit providing his definitions are clear and adequate. We should note that he formulated his

definition of the double-J-curve only after supposedly careful examination of obtained distributions, as he also did in the case of his single-J-curve. Observations on his data led him to limit his definition by introducing the word "steep." Obviously, then, in his study of institutional behavior he is not interested in just any curve which may be demonstrated to have positively accelerated slopes, however slight the acceleration may be, but in curves which may be said to be "steep." The only quarrel we might have with Allport is that he did not say how steep the curve must be. In other words had he given us some idea of the degree of acceleration of the slopes, the term "steep" would have more meaning.

2. The Term Leptokurtic

Dickens and Solomon deplore the fact that Allport made the mistake of "tacking on" the term leptokurtic. According to them the term has no place in Allport's discussion.

The term leptokurtic refers to the "peakedness" of a curve or its "thinness in the shoulders." If a curve is significantly more peaked than the normal probability curve, as determined by the standard error, then it is leptokurtic. Obviously a curve may be more or less peaked, and perhaps we may say more or less leptokurtic. In what ways does a curve which is more peaked differ from one which is less so? The more peaked or leptokurtic a curve is the greater is the degree of positive acceleration of the lower part of its slopes and the less the amount of negative acceleration at the top of the slopes. Theoretically, then, as the curve becomes more peaked the negative acceleration becomes less and less as it approaches zero. Thus we may have a leptokurtic curve whose slopes are "steep" and "positively accelerated throughout." Hence a double-J-curve can be leptokurtic.

Allport and his students may object to this on the grounds of skewness. However, if the skewness of a distribution is not statistically significant, as was the case in the punctuality distributions obtained by the present writer (3, pp. 22-23), then the matter of skewness may be dismissed.

The fact that Allport used the term leptokurtic,

advisedly or inadvisedly, at least twice, cannot be gained. Hence to determine the kurtosis of the distributions I presented (4) was perfectly proper. Perhaps I did fail, however, to carry out the reasoning far enough. If only the very peaked leptokurtic distributions have completely positively accelerated slopes, then all of Allport's curves would have to be extremely peaked, that is, much more than just significantly leptokurtic in order to fit his hypothesis. Further this would eliminate all curves whose kurtosis would indicate that they are platykurtic or mesokurtic, and would restrict the hypothesis to only a small proportion of those which test leptokurtic. Such curves probably would be rather hard to find and many would not fit the hypothesis as I have demonstrated in an earlier article (4).

CONCLUSION

1. Since Allport incorporates the 50 per cent limit of conformity in the definition of his hypothesis, it must also be included in the definition of the single-J-curve.

2. If J-curves of uniform and variable acceleration were defined in terms of acceleration, we would have an index which would enable us to compare the institutional behavior of one group with that of another.

3. The double-J-curve may be defined as leptokurtic. To do so, however, limits the hypothesis to but few distributions, and also permits us to determine, by means of kurtosis, whether a curve can be of the double-J-type.

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FURTHER THEORETICAL CONSIDERATIONS OF THE J-CURVE HYPOTHESIS

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The justification for theoretical discussions lies in their relevance and direct application to experimental data; otherwise, such discussions often obscure meaning and lead to further confusion. In the following comments on the J-curve hypothesis, in the light of recent criticism and counter criticism (2,3), the writer has attempted to confine his views to those points which have a direct bearing on the nature of the telic continuum¹ in relation to the interpretation of conforming behavior.

In his most recent paper (4), Dudycha has again raised questions concerning: 1) the 50% limit of conformity; 2) the positive acceleration of the J-curve; and 3) leptokurtosis in relation to the double-J-curve. If another reply were necessary to Dudycha's latest efforts to maintain his position in respect to these points, we would want to do no more than to restate almost verbatim our interpretations which were set forth in an earlier article (2). This would seem unnecessary since the reader can easily refer to this paper and form his own opinions.

There are other points, however, which seem to need more detailed consideration; these have to do, for the most part, with the foundations of the statistical treatment of conformity distributions. It should be emphasized here that it is not necessary to demonstrate the presence of conformity distributions by curve-fitting or by formula; for if a distribution is J-shaped, this can be shown by simple subtraction to determine that the

1. A telic continuum may be defined as one of the amount of fulfillment of the purpose of a common or prescribed act.

percentages on successive steps are positively accelerated. Then, too, as we have pointed out before (2), the statistics used with normal distributions are not applicable to J-shaped conformity distributions. What is needed apparently, is a workable formula for comparing the total conformity of one J-shaped distribution with that of others.

Dudycha has recently offered such a formula (3):

$$y + yr + yr^2 + yr^3 + yr^4 + \dots yr^{(N-1)},$$

where y equals the frequency on any step of the abscissa, and r equals the ratio or increment. Since originally this formula was applicable only in rare cases, Dudycha now suggests that it should be used as a basis for the development of an index for comparing J-curves. The formula, I agree with Dudycha, is not without some merit; his suggestion, however, is impracticable.

Apart from the fact that formulae of this type do not truly describe the J-curve mathematically (there is no infinitely divisible independent variable),² it is questionable whether there is a "true theoretical J-curve of conformity" in the same sense that there is a theoretical normal curve of compound probability. In this sense, every conformity distribution is unique; there are no "errors" or deviations from an "ideal" J-curve, for each conformity distribution can be fitted to one or another of the many J-shaped curves, each one of which is no more or less J-shaped than any other.³ It is true that

2. In the graphic representation of the J-curve, what we have along the abscissa, is a series of steps based on conceptual categories which are unlike the infinitely divisible empirical units of time and space. This difficulty, however, has been removed by a technique which we have developed, by which the scale along the telic continuum is constructed by psychophysical methods, and then is transferred on to the scale of the empirical continuum. By this means, it is now possible to work with infinitely divisible telic units; to measure telic behavior in terms of empirical units; and to determine with some accuracy the coordinates of any two points on the curve.
3. Complete conformity, on the other hand, is represented graphically by an "I"-shaped curve; i.e., a distribution in which all of the cases occur on the first telic unit of the continuum.

any J-shaped distribution may be described by a curve of best fit, but then the best that can be done perhaps is to determine deviations of the observed data from their own curve of best fit. The limited application of this procedure would hardly seem to warrant the complicated and time-consuming mathematical operations involved.

Nevertheless, this does not mean that comparisons of different J-shaped distributions in respect to conformity can not be made. Our efforts, however, must be directed along other lines. Any index of conformity, in our opinion, must be based on and integrated with the fundamental concepts of conformity as suggested by the J-curve hypothesis. Because of the nature of the telic continuum, the mode of the conformity distribution and the range of the number of steps on which the balance of the behaviors are distributed play a more important rôle than is indicated by a formula of the type given above.

For the purpose of illustration, let us consider three hypothetical conformity distributions, with the percentage of cases on each step distributed as follows:

<u>Distribution</u>	<u>Step Number</u>					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
1	57.1	28.6	14.3			
2	60	20	10	6	4	
3	50.8	25.4	12.7	6.3	3.2	1.6

In considering the relative amount of conformity expressed in these three different distributions, the most important single criterion of conformity is the percentage of cases on the modal step, since this represents the number of individuals who actually do behave in the prescribed or approved form. All other percentages represent individuals who, in some manner, do not conform, since they are behaving in ways other than that which is prescribed or approved. If this were the only criterion of conformity, the above distributions might be ranked for conformity as follows:

1. Second distribution; 2. First distribution; 3. Third distribution.

However, in addition to the modal step, the entire distribution must be taken into consideration. The individuals falling on the second step of the distribution behave in a manner which is but one telic unit removed from conformity; by similar reasoning, those on the third step are two telic units removed from conformity as expressed in the modal act. Any numerical index of conformity must, in our opinion, recognize the meaning of these deviations from the conforming act, and must provide the means (in the form of a mathematical operation) of dealing with them. In other words, the percentage of cases falling on the various intervals away from the mode have to be weighted, in some manner, according to their distance or dispersion (in terms of telic units) away from the mode. In the above distributions, the percentages, (1) 14.3; (2) 10; and (3) 12.7, would all be corrected by the same value since they all fall on the second step from the mode in their respective distributions.

Another consideration which must not be overlooked is the unique fact that each step of the telic continuum also stands in relation to the terminal step of the continuum; this step represents behaviors indicative of the least amount of fulfilment of the purpose of the common or prescribed act. In the first distribution given above, the percentage, 14.3 (third step), is not only the second step from the mode but is the last step in the entire distribution. In this respect it is not comparable to the percentages on the third step of the other distributions, since, for example, the third step of the five step continuum (distribution 2) is the median telic unit; thus, it expresses an act which lies halfway between the two extremes. It would seem that the percentage of cases falling on similar steps of continua composed of a different number of telic units should not be directly compared. Rather, in addition to being weighted or corrected for dispersion from the modal act, percentages must also be weighted according to their relative position (in terms of telic units) in respect to the total range of the entire distribution.⁴

4. It is almost unnecessary to point out that the formula suggested by Dudycha does not satisfy these conditions. In the illustrations we have used, distributions 1 and 3 both have a constant

An index of conformity which would adjust percentages according to the significance of 1) the modal step; 2) dispersion in telic units from the modal step; and 3) the number of telic units on the continuum, would be analogous to certain indices of intelligence or learning in that it is based on the fundamental concepts involved, in addition to the nature of the empirical distribution curves.

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AN INDEX OF CONFORMITY BASED ON THE
J-CURVE HYPOTHESIS

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Since the J-curve hypothesis of conforming behavior was formulated by Professor F. H. Allport (1),

(Footnote continued) increment or ratio of 2; yet, according to our contentions, distribution 1 shows more conformity since more cases occur on the modal step and because the entire distribution is contained in three telic units rather than in six, as in distribution 3.

Moreover, by the use of Dudycha's formula there would be some difficulty in comparing distribution 2 with the others. For here the r 's differ; reading from left to right, they are: 3 - 2 - 1.66 - 1.5. Which r is to represent the rate of change? Whether increments are uniform or variable, determining r tells us little more about the conformity of the distribution than is already known from the percentages themselves.

the need has been recognized for a simple method of comparing J-shaped conformity distributions. Lately the need for a mathematical formula for this purpose has been re-emphasized in a series of articles in this Journal (2)(3)(4). In a recent paper (6), the writer developed certain concepts which might serve as a basis for a mathematical index of conformity.

It is our contention that such an index, to have the widest application, must be consistent with the principles incorporated in the J-curve hypothesis. In so far as the hypothesis is based on the concept of the telic continuum, the nature of this continuum might be used as a basis for the construction of an index of conformity.

The telic continuum is one of purpose; on the first step is plotted behavior which represents the maximum or complete fulfilment of the particular purpose; on the last step is plotted behavior which represents the minimum or least fulfilment; and on all intermediate steps are plotted those behaviors which represent recognizable classifications falling between these two extremes arranged in order. The number of steps on this continuum may vary from a minimum number of three to an indefinite maximum number, depending in part on the nature of the behaviors and the "field" in which they are measured. The J-curve is predicted only in a field of conforming behavior (one in which there are at least 50% of the individuals behaving in the "prescribed" manner).¹

The index of conformity to be developed here involves the weighting or the revaluation of the percentages distributed on the several steps of the telic continuum. The basic formula is given by the following general expression:

$$W = \frac{Y_i}{\sqrt{1 + (i - 1)N}} \quad (I)$$

where: Y equals the percentage of cases on any step;
 i equals the position of any particular step on the continuum;

1. For a more detailed definition, discussion, and clarification of these points, cf., (1)(2)(3)(4).

N equals the number of steps in any particular continuum;

W is the weighted percentage for the step interval.

To find its weighted or corrected value, the percentage on any step (Y_1) is divided by the square root of one plus one less than the position of that step in the continuum multiplied by the total number of steps in the continuum.

It will be seen that, 1) providing i is greater than one, as N becomes larger (i.e., as the total number of steps on the various continua increase), the fractional expression becomes smaller; 2) as i becomes larger than one, (i.e., as the step deviation from the modal step increases), the expression also becomes smaller; 3) if i is one, as N becomes larger, the expression does not change.

Let us illustrate the application of these points by reference to the following J-shaped distributions:

Distribution	Step (i)				
	1	2	3	4	5
	Y_1	Y_2	Y_3	Y_4	Y_5
$N = 3$ A -	70	20	10		
$N = 4$ B -	75.5	22	2	.5	
$N = 5$ C -	60	20	10	6	4

When the proper values are substituted in formula (I), the value of the denominator in the formula for each step on the above three continua becomes:

$$\begin{array}{l}
 A \quad \sqrt{1} \quad \sqrt{4} \quad \sqrt{7} \\
 B \quad \sqrt{1} \quad \sqrt{5} \quad \sqrt{9} \quad \sqrt{13} \\
 C \quad \sqrt{1} \quad \sqrt{6} \quad \sqrt{11} \quad \sqrt{16} \quad \sqrt{21}
 \end{array}$$

Regardless of the total number of steps on the continuum, the expression for the first or modal step is always:

$$\frac{Y_1}{\sqrt{1}} \quad (II)$$

hence, the percentage on this step is always divided by 1, and remains unchanged. Thus, full value is given to those behaviors which indicate complete fulfilment of the purpose, since on the telic continuum no act can indicate more conformity than the modal act.²

The percentages on the remaining steps become reevaluated by successively diminishing proportions, depending not only on how far the behavior represented by that step is removed from the maximum fulfilment of the purpose (the first step), but, at the same time, on how near that behavior is to the minimum fulfilment (the last step).^{3,4} The percentages in distributions, A, B, and C, are reevaluated by formula (I) as follows:

Distribution

A	-	70	10	3.8			
B	-	75.5	9.87	.67	.14		
C	-	60	8.16	3.01	1.50	.87	

To obtain the index of conformity for a distribution, two additional steps involving simple mathematical operations are necessary.

If we let zeta (Z) represent the sum of the reevaluated percentages of steps 2 to N , subtracted from the reevaluated percentage on the first or modal step, we have:

$$Z = \frac{Y_1}{1} - (W_{1_2} + \dots + W_{1_N}) \quad (\text{III})$$

This is both a necessary and a logical procedure; for, by referring to the denominator in formula (I), it will be seen that whereas this denominator becomes proportionally larger as N increases, the ultimate effect of N should be to decrease the expression. This is now ac-

2. Allport (1), p. 157.

3. Cf., Solomon (6).

4. As i increases, the value under the radical increases by the number of steps on the continuum; as N increases, the value under the radical increases by one less than the number of the step position in the continuum.

complished by subtraction; and, at the same time, all percentages representing incomplete degrees of conformity have been deducted from the percentage of cases representing complete conformity.

By the application of formula (III) to obtain \underline{Z} for distributions, A, B, and C, we have:

Distribution

A	-	$70 - (10 + 3.8) = 56.2$
B	-	$75.5 - (9.87 + .67 + .14) = 64.82$
C	-	$60 - (8.16 + 3.01 + 1.50 + .87) = 46.46$

The last step to find the index of conformity (I_c) involves the readjusting of the zeta (\underline{Z}) values. For a more convenient interpretation of the index, it is advisable to set the limits that the function I_c can take between 0 and 100; so that when I_c equals 100, complete conformity is indicated, and when I_c equals 0, the least amount of conformity is indicated.

It has been determined from numerous empirical and theoretical J-shaped conformity distributions that the lowest value zeta (\underline{Z}) can take is 25. Therefore at the lower limit, $\underline{Z} - 25 = 0$. At the upper limit, complete conformity in a distribution is indicated by

$$\frac{Y_1}{\sqrt{1}} = 100;$$

$$\text{hence: } \underline{Z} = 100;$$

$$\text{when } \underline{Z} = 100, \quad \underline{Z} - 25 = 75;$$

$$\text{hence: } (\underline{Z} - 25)1.33 \frac{1}{3} = 100.$$

Thus, within the numerical limits of conformity which have been set, the final formula for the index of conformity⁵ is:

$$I_c = (\underline{Z} - 25)1.334 \quad (IV)$$

5. The relative amount of conformity shown by this index for distributions, A, B, C, is 41.62, 52.96, 28.65, respectively. For further significance of the numerical value of the index of conformity, it may be helpful to present here the I_c values for some distributions which have been found through experimentation.

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(Footnote continued)

94.1	2.9	2	1;	$I_c = 88.9$, Allport (1)						
84	5	4.5	3	1	1	1	.5;	$I_c = 73.3$, Solomon (7)		
65	19	11	2	3;	$I_c = 37.3$; McGregor (5)					
57.9	14.1	12.9	5.6	3.5	1.6	1.5	1.4	.62	.37	.25
								.25; $I_c = 32.3$, Solomon (7)		
50.1	38.8	6.7	3.1	1;	$I_c = 8.3$, Allport (1)					

Degrees of conformity in terms of I_c values might be classified as:

very high - above 75; high - 75 to 50; moderate - 50 to 25;
low - below 25.

EMOTIONAL STEREOTYPES IN THE CHICAGO TRIBUNE

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The CHICAGO TRIBUNE exerts a rather curious influence in the Middle West. Its circulation is enormous; approximately 900,000 copies go daily into more than a dozen states. In the farm belt it is relied on somewhat like an almanac or a mail-order catalog. Farmers ship or hold their hogs by its market reports. Small town merchants stock their stores by its business forecasts. Chicagoans lay down two cents for it every morning if not from preference, from habit, or because the alternative is a Hearst paper. Even persons who dislike the Tribune grudgingly buy it to get local news.

Col. Robert R. McCormick publishes the Chicago Tribune, which he calls the World's Greatest Newspaper. He and it are staunchly Republican. Daily its editorials and cartoons denounce the New Deal, organized labor, relief measures, in fact, virtually everything that smacks of social reform. Editorials and cartoons are, of course, legitimate channels for propaganda. However it is fairly well established among the newspapers of our time that a certain standard of objectivity must be maintained in the news columns. National news as reported in papers such as the New York Times or Christian Science Monitor assumes a vastly different color in the columns of the Chicago Tribune.

This is not purely a personal observation. Newspaper men themselves place a low rating on the reliability of Tribune news. In a poll taken among ninety-nine Washington correspondents to name the paper presenting the most fair and reliable Washington news, the New York Times ranked highest with sixty-four votes. The Tribune received only one vote, a rating equal to that given the Communist Daily Worker.

This poll obviously does not indicate that the New York Times is a perfect example of journalism, or that the Tribune represents the lowest possible calibre of news writing. That on a relative scale the Tribune ranks conspicuously low undoubtedly is due in part to its practice of opinionizing instead of writing straight news. It labels its bêtes noires with adroit adjectives that arouse negative emotional reactions in readers. Similarly it attaches flattering phrases to favored policies or persons. In truth the Tribune may be said to have developed the technique of propagandizing by stereotype terms to something approaching a fine art.

Unfortunately it is difficult to prove that emotionally-laden words are used by an editor to influence public opinion in a desired direction. However it can be shown that certain terms actually do arouse standardized emotional responses. For example, when the Chicago Tribune calls a piece of legislation the "Farm Dictatorship Bill," it is hard to demonstrate that this term is used to prejudice readers against the bill. But it is quite possible to show that such a term arouses negative reactions. This study deals with propaganda as shown in the effects of emotional stereotypes on newspaper readers, not with the motives which prompt the use of such terms.

Forty terms were selected from the news columns of the Chicago Tribune. Twenty of these had been used frequently by the Tribune referring to policies that it does not support. The other twenty terms referred to approved policies. (See the two columns in Chart I.) Ten neutral terms were added to the list, and the fifty items arranged in mixed order.

Six groups of adults were used, totaling 231 subjects: a large P.T.A. meeting, a high school alumni fraternity, beginning and advanced college students, a workers' forum, and a middle-class community forum.

Procedure was as follows: each subject was given a mimeographed sheet and told that the purpose of the experiment was to get his immediate emotional reactions to various words and phrases. As the experimenter read the terms one at a time, the subject checked L (Like), D (Dislike) or ? (No feeling about it). Two sample words were given before the experiment began. Intervals of about six seconds only were allowed between the words to

insure an immediate emotional reaction. Source of the term was not indicated.

Chart I

REACTIONS OF 231 SUBJECTS (MEMBERS OF SIX
DIFFERENT ADULT GROUPS) TO FORTY TERMS
SELECTED FROM THE COLUMNS OF THE "CHICAGO TRIBUNE"

A. Terms referring to New Deal policies and practices and to organized labor (especially industrial unionism)		B. Terms used to refer to Republican policies and practices, non-strikers, etc.	
	Score*		Score*
Czarism	-84	Cooperation	95
Dictatorship	-84	Freedom	92
Monopolistic practices	-82	Reemployment	88
Domination	-79	Recovery	79
Repressive measures	-65	Right to work	77
Regimentation	-64	Industry	77
Agitator	-63	Business	68
Assault on business	-59	Private initiative	66
Espionage	-57	Loyal workers	59
Court packing	-52	Business community	58
Communist	-49	Free competition	57
Inquisitor	-46	Constitutional principles	53
Radical	-37	Private enterprise	52
CIO Partisan	-36	Business man	52
Brain Trust	-30	Investment capital	34
Alien	-27	Constitution defender	30
Spending program	-08	Conservative	28
Political regulation	-04	Taxpayer	27
Collectivist economy	03	Capitalism	-01
Economic innovations	12	Resolute Democrat	-22

*Score equals $\frac{\# \text{ checking L minus } \# \text{ checking D}}{\text{Total } \# \text{ Subjects}}$

Results were tabulated for each group, and for the total of 231 subjects in all groups thrown together. A stereotype score was calculated for each term by

subtracting the number of D from the number of L responses, dividing this by the number of persons in the group and multiplying the decimal by 100. The question mark responses are omitted from the formula, but they affect the results by diminishing the size of the numerator and thus reducing the score. Hence the term that arouses the most consistent or standardized emotional response is considered the most stereotyped. (See examples at top of each column in Chart I.) How far down the list may we go and still speak of the term as stereotyped? Plus or minus fifty is suggested as a good point of demarcation, but the differences exist, of course, in all degrees.

If the fifty point criterion is accepted, we can see that half the terms in the first column, and seventy per cent of those in the second column call forth a stereotyped emotional response in the subjects tested. In other words, a great many terms used descriptively or appositively by the Chicago Tribune referring to policies, practices, and individuals favored or not favored by that paper call forth respectively pleasant and unpleasant responses in readers. Note that this is not true in all cases. Of the terms submitted, ten per cent (the two in each column) went slightly in the opposite direction from that expected. Some inconsistencies, furthermore, can be noticed in the results. For example, the terms "collectivist economy" and "economic innovations" are slightly favored, but the reaction to "capitalism" is almost zero. Yet "industry," "business," "private initiative," "business community," "free competition," "private enterprise" and "business man" are strongly positive. Apparently persons react in some measure to terms as concepts isolated from their broader contexts.

Marked similarity of reactions exists among the different groups. Rank order correlations ran from .81 to .96 between all groups except the workers' forum. The correlations between its responses and the other groups averaged close to .40. The members of this workers' forum showed their atypicality by registering strong favorable reactions to "collectivist economy," "spending program," "radical," "economic innovations" and "assault on business." Their strong negative reactions included

"Tribune," "taxpayer," "conservative," "capitalism," "private enterprise" and "business men." A forum group can hardly represent a good cross-section of labor attitudes. Nevertheless the contrast with all other groups (which were essentially middle class in character) suggests that class differences in emotional stereotypes deserve further study.

Another interpretation concerns the number of question mark responses found in the various groups. The fewest, an average of 6.85 per subject, was found in the P.T.A. group. The greatest number of question marks was found among the college students, especially the advanced class, which averaged over 16 per subject. The difference amounts to almost ten responses, having a critical ratio of 6.0. Apparently fathers and mothers are more susceptible to emotion-arousing terms than college students; but this generalization must be discounted somewhat as the environment of the two groups is not identical.

Because the word "Tribune" was one of the so-called neutral terms added to the forty chosen items, the reactions of all subjects who marked L for "Tribune" (68 in number) were compared with the reactions of those who marked D (105 in number). As might be expected, the former group showed greater dislike for the term "radical," "agitator," "brain trust," "court packing," and "assault on business." Likewise it showed greater liking for "business," "private enterprise" and "the Constitution." The most striking contrast between these Tribune likers and Tribune dislikers, however, concerns the degree of emotional reaction. Out of a possible twenty unfavorable stereotypes, the group of subjects liking the Tribune showed a significant score (minus 50 or more) on seventeen, while the other showed significant scores on only seven. Similarly, out of a possible twenty favorable stereotypes, the Like Tribune group showed a significant score of 17, and the other group for only six. Furthermore the Like Tribune group shows only 7.70 question mark responses per list, compared with 12.02 for those who dislike the paper. The critical ratio of the difference is 3.63(D/od). It would seem that those who like the Chicago Tribune also have pronounced likes and dislikes in political and economic matters.

Chart II

COMPARISON OF EMOTIONAL REACTIONS OF SIXTY COLLEGE STUDENTS
TO VARIOUS CHICAGO TRIBUNE TERMS AND TO OTHER TERMS USED IN
THE SAME CONNECTION BY THE NEW YORK TIMES

	Score D		Score D	
CT - Radical	-53		CT - Farm dictatorship	-55
NYT - Progressive	92	145	NYT - Crop control	-02 53
CT - Government witch hunting	-38		CT - Loyal workers	60
NYT - Senate investigation	57	95	NYT - Non-strikers	08 52
CT - Regimentation	-53		CT - Inquisitor	-22
NYT - Regulation	32	85	NYT - Investigator	23 45
CT - Communist CIO Leader	-68		CT - CIO Dictator	-72
NYT - Maritime leader	10	78	NYT - CIO Chieftain	-33 39
CT - Labor agitator	-63		CT - Alien	-35
NYT - Labor organizer	12	75	NYT - Foreign	0 35
CT - The dole	-35		CT - Mass picketing	-55
NYT - Home relief	27	62	NYT - Picketing	-50 5

Another step was taken to obtain a more direct check on the use of emotionalized terms. Twelve terms having possible emotional value were chosen from the Tribune news columns, and twelve parallel terms used in the same connection were taken from the New York Times. (See Chart II.) These 24 items, in mixed order, along with 26 other terms were submitted to sixty college students. The results are shown in Chart II. The median difference in stereotype score for these pairs of items is considerable--57.5 points. In each case the Tribune term is found to influence subjects in a direction consonant with the political and economic policies of that paper.

Certain important criticisms can be made of the methods used in this study.

For one thing, the terms are taken out of their context. Possibly this situation may be corrected by selecting sentences, paragraphs, or even articles, though this would complicate the procedure. Precautions to rule out cues to the source of the material would have to be taken.

Another possible source of error relates to the way in which terms are chosen. Unless these terms are used descriptively, not directly quoted material, the results will have little value as a study of propaganda. Furthermore, a distinction should be made between material taken from editorials and cartoons--where readers expect to find opinion--and from the news columns where they do not. Probably the best method is to search out parallel terms--i.e., terms used in the same connection in two or more sources, as was done just above.

In conclusion, this study clearly reveals emotional stereotypes in the news columns of one of the largest daily papers in the country. Furthermore the method of investigation followed promises to be a sound quantitative approach to the task of analyzing propaganda.

AN ATTEMPT TO MEASURE CHANGE OF ATTITUDE
As a Result of Hearing Speakers¹

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By means of a more or less conventional type pencil-and-paper test, an attempt was made in June, 1937, to determine how far, if at all, two speakers changed the opinions of members of a group of Young Unitarians who heard them throughout a week of conference. Considerable statistical analysis, suggested by the various previous experiments of this sort,² showed no statistically significant change of opinion of any character which would justify one in believing that the speakers had changed the opinions of their auditors.

However, inspection disclosed the fact that there was a greater-than-chance shift towards the "true" end of the scale, regardless of the content of a proposition, and further analysis disclosed a statistically significant change in this direction. Propositions which the speakers had dealt with so that one would expect a negative shift merely failed to show a significant positive shift.

The above-described test had been prepared hurriedly, and reflection indicated at least two variables which might be controlled, were the experiment to be repeated.³ Therefore, in 1938, in consultation with the

1. I am deeply grateful to the six speakers especially involved, to the Shoals Committees of 1937 and 1938, to John Brigham, Harriet Dexter, Donald Fiske, Barbara Sturtevant, and to all those concerned with arrangements which facilitated the giving of these tests and who assisted in their preparation.
2. Surveyed by Gardner Murphy, Lois Murphy, and Theodore Newcomb, Experimental Social Psychology, 2nd ed., New York, 1937, 946-80.
3. After the construction of the second test was started, it occurred to me that one reason for the overwhelming shift towards "True" on the first one might be this: Practiced speakers tend

four main speakers for both weeks of the Young People's Religious Union (Unitarian) Summer Conferences, attitude-tests were prepared. There were five steps on these, ranging from Certainly True to Certainly False, and respondents were also given the opportunity to check DK if they did not understand the meaning of a statement or considered themselves unfamiliar with its factual background.

The procedure of administration differed from that customary in the usual before-and-after experiment in one chief respect. At the beginning of the week, the attendants at the conference were asked to take a test "in order to guide the speakers and conference leaders." At the end of the week, without prior announcement, the same test was given to them. Although it was not explicitly so stated, a reasonable inference from the instructions given the second time would have been that the tests were in fact different, since the respondents were asked to bear in mind that, even if some questions were similar, we were interested in their opinions now, and if they had changed their minds during the week on any similar questions, please to put down their new opinions, etc. Although about twenty people both weeks came up to me afterwards with questions, suggestions, queries, only four asked me whether the test wasn't really the same both times.

Anonymity was preserved, but an elaborate series of questions about date of birthdays, etc. (to "see if people whose birthdays were at different times, fathers had different jobs, etc., have different opinions") facilitated matching. Eighty-one matched tests were obtained the first week, forty-four the second. There were twenty propositions on each test, some based upon what one speaker expected to say, some upon what the other expected to say, and some were neutral, control questions (i.e., propositions about matters on which it

(Footnote continued) to emphasize positive rather than negative propositions in American culture at least. There was a tendency therefore for negative statements to be circumlocutions or paraphrases of what was said, whereas positive statements represented exactly what had been said.

was believed respondents would have no special stimulus to think during the week. Since the conferences are held on a relatively-isolated island, where there is no listening to other speakers, little radio, and a very small amount of newspaper-reading, it was easier to classify propositions as neutral than would ordinarily be the case).

The first hypothesis to be investigated was of course whether or not the speakers this year seemed to have exercised a strong influence in changing opinions. This would also serve as a null hypothesis for the probability of a heavy "True"-direction shift.

A technique based upon that of Murphy and Likert⁴ was employed, i.e., the number of actual shifts was divided by the number of possible shifts in a given direction and the fraction thus obtained was subtracted from a similarly obtained fraction, based upon actual and possible shifts. The latter fraction being the direction of expected shift, the former the direction contrary to this, the final result would indicate the effectiveness of the speakers in changing opinion. A result of .00 would indicate complete change.⁵

Summing up the results for the different speakers and for the neutral questions, we find that the net average change on the neutral questions would by this technique be represented by (-).06, on speaker A's questions by .11, B on .45, C on .26, D on .19. (Here we are calling a change towards the "true" direction

4. G. Murphy and R. Likert, *Public Opinion and the Individual*, New York, 1958, 159-60.

5. This procedure can of course be employed counting each possible shift and each actual shift simply as 1 (simple calculation) or calculating shifts of 2, 3, and 4 degrees, actual or possible as 2, 3, and 4 (gross calculation) (or by any other method of multiplication. An elaborate one based upon the standard deviation of the theoretical frequency produced results similar to crude gross calculation). Murphy and Likert found simple and gross calculation closely correlated; in the present experiment the following differences occurred: (.82, .71), (.02, .14), (.26, .17), (-.02, -.12), (.28, .14) (-.01, .17) as the greatest instances of difference. (There were three other cases of a difference of .10 or more.)

favorable on the neutral questions, for purposes of comparison, because, in the light of our previous experiment, we would have considered this the expected direction of change, if there were no interfering stimulus, viz., speakers.)

The interesting point about the above listing is that speaker A dealt with definite, concrete, easily statable propositions, of the following character:

"14. Our country is not a democracy really any more, for it is being run mostly by the big interests, which don't pay much attention to the needs of ordinary people," and that he was outstandingly superior to B and D as a group leader and in the skills which make speaking challenging and interesting to listen to, and presumably easy to remember. A is also by choice a practicing propagandist, as none of the three other speakers are, and has held offices in religious organizations, partly because he is recognized as such an excellent speaker. About a dozen people, connected with the conference organization, have spoken to the writer so as to indicate their beliefs that A was a far more influential speaker than B or D.

But of course A's subject-matter, although clear and definite, ran far more definitely counter to the formulated "bourgeois" beliefs of the group, than did that of the other three. Therefore, two other measures were applied to the speakers to compare their effectiveness. It was thought that possibly A would provoke a large amount of change, but much of it antithetical in character, since he provoked more controversy. Therefore the ratio of the total number unchanged to the total number changed⁶ was constructed for each question. The greater the ratio the smaller the change on the question. Averaging the results so obtained, the mean change on the neutral questions was represented by the ratio 2.13, and A's propositions by 1.13, on B's propositions by 1.49, on C's propositions by 1.35, on D's by 1.60. In other words, A, as surmised, caused the

6. Minor discrepancies may appear in the calculation presented in this article. For instance, one question was eliminated from consideration because both speakers mentioned it, one advocating one answer, another the contrary, and on each question a certain (usually small) number answered "DK" or omitted to answer.

greatest average amount of change, although frequently not in the direction which he himself advocated.⁷

As a check on the conclusions thus drawn, separate averages were obtained for the favorable ratio described above, giving the gross average favorable-direction change, which in the case of A is represented by .35, B by .45, C by .48, and D by .39. (Calculation on the basis of gross changes (footnote 5) instead of simple preserves the same relative order, markedly increasing the significance of A's lower standing however, since in this case, that is his gross calculation gross favorable direction change, his results are represented by .22 to B's .31 and C's .39.)

However, even in this case, it is rather likely that the changes occurred due to the effectiveness of the speaker and not by chance. Two-hundred-and-sixty-seven changes occurred of which 44% (17.5) by chance would have been in the direction not indicated by the speaker, whereas in fact only ninety-seven changes in this direction actually took place. Using the standard deviation of the expected frequency, the change is a little over 2σ . In the case of the propositions upon which B might have been expected to alter opinions, the same σ is about 1, in the case of C's 4σ , and D's approximately 2σ .

Calculations also based upon the standard deviation of expected frequency could be presented, showing a trend, less significant than the above, for a change to take place in the direction of "True." Such calculations would seemingly be reenforced in significance by the circumstance that the change on the propositions of which the speakers emphasized the negative aspect was usually slightly positive.

But any attempt to generalize on the basis of

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7. The neutral questions for the first week (when A and B spoke) are represented by 2.44, for the second by 1.93. This might indicate that the first week group were more likely to keep their opinions. Were a careful effort made, an index of individual chance variability might be obtained through the submission of a number of neutral questions. Correction by such an index would possibly be helpful in estimating relative persuasiveness of different speakers on different individuals.

these two occurrences is rendered inadvisable by the fact that shifts on the ten neutral questions are represented by (using the Murphy-Likert formula, supra, and considering "True" the expected direction of shift) $-.01$, $-.06$, 0 , $-.19$, $.12$, $.04$, $-.47$, $-.09$, $-.02$, $.04$. Possibly the two questions represented by $-.19$ and $-.47$ should be omitted from consideration. The first of them "Love at first sight is apt to be the most perfect kind of love" may have been disproved by some of the respondents during the course of the week and the probable factor of a good many bull sessions on sex may have been responsible for the change of attitude on "The less people think about sex and the things connected with it, the less likely they are to get themselves into trouble, and they hear enough about it in all sorts of ways, so churches and schools ought not to have any sex education." It is noteworthy that, although not mentioned by any of the speakers and only in one discussion group attended by a minority of the conferees, there was a greater net change on this item than on any save three other propositions. But even omitting these two the greater "pull" in the "True" direction hypothesis does not look particularly convincing.

Attempts were made to find various patterns. It was thought that possibly some individuals might show a definite positive "True"-direction shift throughout the week. This did not appear nor did the contrary. (In an attempt to differentiate groups of individuals, everyone was asked at the end of the week to indicate how well he had liked the Conference, but since with five exceptions all replied unqualifiedly "Very much" this question possessed no discriminatory value.)

It was thought that some individuals might show a tendency to be much influenced by one speaker but not by the other. This did not appear. A few cases on inspection appeared to show a negative reaction throughout to a speaker, but there were not enough of these cases to justify any claim of significance.

Inspection seemed to indicate a few individuals who changed three or four steps, or not at all, and more who tended to change only one or two steps. There was every indication that very few, if any individuals, tried to remember (or could successfully remember) what they had said the first time.

No generalizations could be made about a greater likelihood of change from Uncertain than from the other positions, etc.

These two experiments on the same group are not of course entirely reconcilable with each other. The chief significance of the one more fully reported here is that it shows much less significant change than do the majority of experiments hitherto made. It is of course true that some, probably a fair proportion of the individuals tested, did not hear all the lectures about the various subjects covered by the questionnaire. But it comes nearer to a real-conference situation if this be the case, and gives a clearer measurement of the amount of change of opinion which may be expected in the average conference of this character. It would of course be desirable if it had been possible to obtain in an unobtrusive manner exact information on which respondents had missed which lectures.

The writer is convinced that greater significance should be attached to the content of the questions on which great change was recorded than to any of the items analyzed above. For instance, the greatest change of all (in the direction desired by the speaker) was on the item "Insanity is not ordinarily to be regarded as a disease but rather as an attempt to escape from something by persuading oneself that things are different from what they seem." The favorable change on this item may be interpreted: Nearly all the respondents had a definite but not especially emotionally-toned or dogmatic viewpoint on this subject. Most of them know very little about it. When a speaker in whom they had confidence presented an idea with assurance and sincerity, contrary to that with which they were familiar, it was easy to change, and precisely because the idea was new and different, they found it attractive.

In relation to notions put forward by A, however, a dogmatic blockage, a system of classification which considers "red-ness" anathema, prevented a similar reaction.

It was also interesting to observe that, even for many who did not seem specifically to have been impressed by any of the lessons which might have been drawn from the Old Testament material which D presented,

it had become clear that "study of the Old Testament is apt to be of great value to the student of modern social problems."

But the statistical type of analysis here employed does not give the opportunity to do much more than hazard unsubstantiated guesses. Possibly the use of opinion-autobiographies, correlated with statistically-analyzable material, might be more useful. It is hoped that these may be tried with a similar group another year.

Since those who are specifically interested in research in this field will already be familiar with the other experiments, and since the writer is now engaged in preparing a criticism of the methods of investigation hitherto employed in the study of public opinion, no attempt will be made here to relate this study to those which have preceded it.

MEASUREMENT OF THE DISSOLUTION OF IN-GROUPS
IN THE INTEGRATION OF A RURAL
RESETTLEMENT PROJECT¹

C. P. Loomis
and
D. M. Davidson, Jr.

ABSTRACT

Three groups on a rural resettlement project were in conflict. Integration into a community took place slowly and only after common opposition developed. The sociometric problem set for this study was that of determining whether or not the original "in-groups" still existed. Place names in the article are fictitious.

The ultimate objective for planned communities, a higher level of living for the inhabitants, cannot be achieved if some measure of community integration does not ensue after resettlement. Although there are some who actually enjoy conflict, quarreling and fighting, most people would prefer to live harmoniously with their neighbors. Most individuals are psychologically so constituted that community dissention, strife and conflict in and of themselves would be looked upon as elements which lower the level of living. There is also the consideration that community conflict may so impair the

1. This is the second in a series of articles on planned rural communities. The first article "Sociometrics and the Study of New Rural Communities" by the same authors appeared in the January issue of Sociometry. These studies conducted by the Bureau of Agricultural Economics in the United States Department of Agriculture are under the supervision of Dr. Carl C. Taylor, in Charge of the Division of Farm Population and Rural Life.

functioning of community social and economic agencies and institutions as to result in an actual reduction of the level of living, both material and non-material.

It must be recognized, of course, that certain types of conflict between groups may draw the individual out of his shell, so to speak, make him forget his troubles and inspire unselfishness of a certain type. This, notwithstanding the thesis here advanced, is to the effect that acute conflicts which exist between groups of settlers within planned communities, such as have been established by governmental agencies in rural sections of the United States in recent years, destroys the objectives of the planners who have desired to have one set of community agencies serve the whole settlement. The well-planned community will reduce to a minimum the conflict among groups and individuals.²

Background of Conflict at Cactus Shade

On one of the new rural resettlement projects which we shall call "Cactus Shade" insufficient consideration was given to this matter in the planning of the project. Three separate groups, none of which were too friendly, were involved. Two groups had one thing in common; they had been "blown out" in the "dust bowl." The government had bought their farms and ranches with the view of saving the land and had moved the people to Cactus Shade where reclaimed irrigation land was available. Besides the two outside groups, there was a third made up of people who had previously lived at or in the neighborhood of Cactus Shade.

Loyalties to a common geographical origin are often strong enough to create "consciousness of kind" and "in-groups." However, there were other factors responsible for the development of the three factions. The settlers from Spur Rowell were, for the most part, ranchers or homesteaders who lived partly from hunting and

2. J. L. Moreno's, "Who Shall Survive," published by the Nervous and Mental Diseases Publishing Company in 1934. Dr. Moreno has suggested techniques of locating settlers which will, he believes, reduce the friction in new communities.

trapping; the settlers from Plowshare had been dry land farmers. As is well known, dry land farmers and ranchers do not always have too much love for each other. The Cactus Shade group were irrigation farmers, some of whom were proud of their Spanish and Mexican blood.

When the project originally designed for 60 families, was opened in April, 1935, the big job confronting the settlers was to clear and level the land. No units were assigned to newcomers and the reclamation work became the chief source of income. Each of the outside groups appointed a foreman and two crews worked separately but under one project manager. It so happened that the Cactus Shade people lived together on one segment of the project, a part most easily irrigated previous to reclamation work. The Spur Rowel people arrived before the Plowshare people. All three functioned as three separate groups or factions from the first. The first year a large area was plowed and subdivided for temporary gardens. The Spur Rowel people separated their area from the rest and drew lots among themselves for units. The Plowshare people decided without drawing lots which plots in their garden allotment would be assigned to them. Most of the Cactus Shade people already had their gardens on their old farms.

During the early stages, conflict was rife. At dances held in a big ranch barn there were "knock-down and drag-out" fights, chiefly between people from Spur Rowel and Plowshare. The Cactus Shade people usually remained at home during these social events and therefore were not involved in so many fights, but they were hated by the other groups who considered most of them as a different ethnic and religious (Catholic) group.

Drawing Lots for Farms

The greatest event in the history of the project was the "drawing" when the farms were assigned. On each piece of paper was written the order in which the person drawing the lot could choose his future farm and home. The Spur Rowel group drew first, then those among the Cactus Shade families who were to have new holdings. Since the Plowshare group came last they were required

to take the units which remained without drawing lots. The Spur Rowel group endeavored to get the best land and, at the same time, arrange the holdings so that they lived together in the same segment of the project. Of course, they were not able to accomplish this, but it happened that the Spur Rowel families came to be more or less concentrated on the north side; the Plowshare families on the south. A road running east and west through the middle of the project came to be called the Mason-Dixon line and was thought of as dividing the two camps. The Cactus Shade group which drew lots were scattered, the others continued to live on the east side of the project. Enough has been said to indicate that the scene was set for prolonged rivalry and contention. Each group attempted to get its members into the leading positions in the social agencies. On such a foundation it would have been difficult to nurture a community spirit.

Common Enemies from Without

However, other conflicts developed which threw all three groups against common outside groups. Space does not permit a complete description of this aspect of the development but it may be sketched briefly. The Indians, farmers and ranchers off the project did not like the newcomers. The site of the project had previously been free grazing land for them, and their livestock continued to bother the colonists. The three groups thus had common antagonists, but this was not sufficient to bring about integration. It took another event to accomplish this.

An Engineer Helps Integrate the Community

The governmental agency administering the project (there were several engaged in this business), thinking that the reclamation work was progressing too slowly, decided that the farmers with their fresnoes were making too little progress. Work must be speeded up. Efficiency must be introduced. To bring efficiency to Cactus Shade, a resident engineer was sent in to take

charge of reclamation. This resident engineer had been reared in the city. He did not know that in places like Spur Rowel and Plowshare people never fail to greet when they happen to pass. He did not know that western ranchers and farmers often proudly assert that they are their own bosses. He did not know that a college education, a "good background," or wealthy parents did not absolve one from the necessity of being friendly with the people with whom he dealt. Not knowing these things, he got into trouble, but he was one of the chief integrating forces in the community. When challenged by individual settlers, he escaped several fist fights by resorting to what the colonists called "playing the coward."

Finding that the farmers' horses could not work night and day in the leveling work and that the settlers were against him, he threatened to bring in machinery. One day he approached the Fresno gang to find the men sitting about resting their horses. He flew into a rage; he shouted that the government could not afford to pay men for loafing and horses for panting. Work must be done. He fired the foreman and then went to town. Now, the foreman happened to be a leader among the Plowshare group, and the Plowshare group decided to start a strike. They were surprised to find that the people from Spur Rowel welcomed the opportunity to join in the strike and fight that "damned" engineer. The strike was a colorful affair. The people from Spur Rowel appeared in cars and on horseback wearing chaps, boots, and spurs. It was suspected that there were Winchesters and Colt firearms aplenty. Excitement ran riot, but the engineer did not stay at the project long. He left word for the farmers to go back to work or the machines would come. The settlers wrote a petition to the governmental administration and went home. Spur Rowelers', Plowsharers' and Cactus Shaders' names appeared together. Eventually the strike was broken. A new foreman went to each settler telling him that he was now boss and that if any settler did not work hard he would be fired. The resident engineer also had his new foreman tell the settlers that if they were allowed to work it should be considered as a favor. This naturally led to more resentment since the settlers had previously held the view that they were pioneers, hewing their future home out of the wilderness.

There were other common trials and tribulations such as general dislike for one of the project managers, which tended toward integration. Some of the policies of the agency in charge were never very definite and settlers were not sure how they were to take possession of their new holdings or how they were to get possession of the equivalent of their old holdings which had been placed in escrow. Orders from the administering agency required that the holdings be enlarged and the number decreased from 60 to 40. This meant that 20 families, including most of the Cactus Shade people, were forced to move. Units were rearranged and the old groupings tended to disappear. Integration had begun and continued as the three groups joined hands against other administration officials and in cooperative endeavor generally.

Did the old in-groups of the people from Cactus Shade, Spur Rowel and Plowshare who remained on the project dissolve completely? This is the problem for the sociometrist. Indications are that integration had progressed considerably in one year's time. From the diary of one of the participant observers living on the project (a member of the original group from Plowshare) the following quotations trace this trend from the beginning: "September 26, 1935. The Sunday School moved from under the trees at headquarters to the school buildings. It was much nicer there, but there weren't seats for all, so many had to stand. Quite a few quit coming. There was over 100 enrolled. The Plowshare families who started to Sunday School and were treated so cold, all quit except Mrs. C. J. and children and two small children of G. J. When Mr. S. or Mr. D. preach after Sunday School, these Plowshare people go home right after Sunday School. They have singing every Sunday night and none of the Plowsharers attend."

"Early in 1936 some member of the Spur Rowel 'bunch' started a petition trying to put the Plowshare people off but so far he hasn't had much luck. Some of the people said they like the Plowshare people better than him. Everyone is talking now that the Plowshare people are going to Bluewater. The gossip really travels now so we can't believe what we hear."

"(Later) there was a petition going to fire

Mr. B. and put G. in his place. Some of the Spur Rowel members and the Plowshare people got rather hostile over the whole affair because the Plowshare people are booked for staying and some of the Spur Rowel people are supposed to leave. Mr. O. said out in public at one of the meetings that the Plowshare people could not stay if some of the Spur Rowel people had to leave and Mr. J., a Plowshare member, nearly collared him. They thought for a while there was going to be a free-for-all fight between the Plowshare and Spur Rowel members. Some of the Spur Rowel men are sticking for Plowsharers."

"February 1936. School and Sunday School are doing nicely. The people have begun to make friends. Some of those from Plowshare, who felt like they were so badly mistreated, are the best of friends with the leaders of the other group. Especially with the preacher M. S. It seems the Plowshare people were as much to blame for their indifference as the others were and have begun to realize the same. The clients are working together much better now and neighbor so much more."

Sociometric Study of Integration

In January 1937, almost two years after the beginning of the project (11 months after the last quotation above), a sociometric map of the community was made to ascertain the extent of the progress in integration (Chart 1).

Each family was asked to give the names of the five families which visited at its home-most frequently. In case family A visited family B and family B visited family A, the relation was called a "mutual" relationship. In case family B did not visit family A, but family A visited family B, the relationship was called single.

From Chart 1 it is possible to determine by sociometric techniques whether the old in-groups still existed on the project two years after its beginning. Even a superficial study of the map will indicate that many of the scars of conflict on the project must be healed and that considerable integration has taken place.

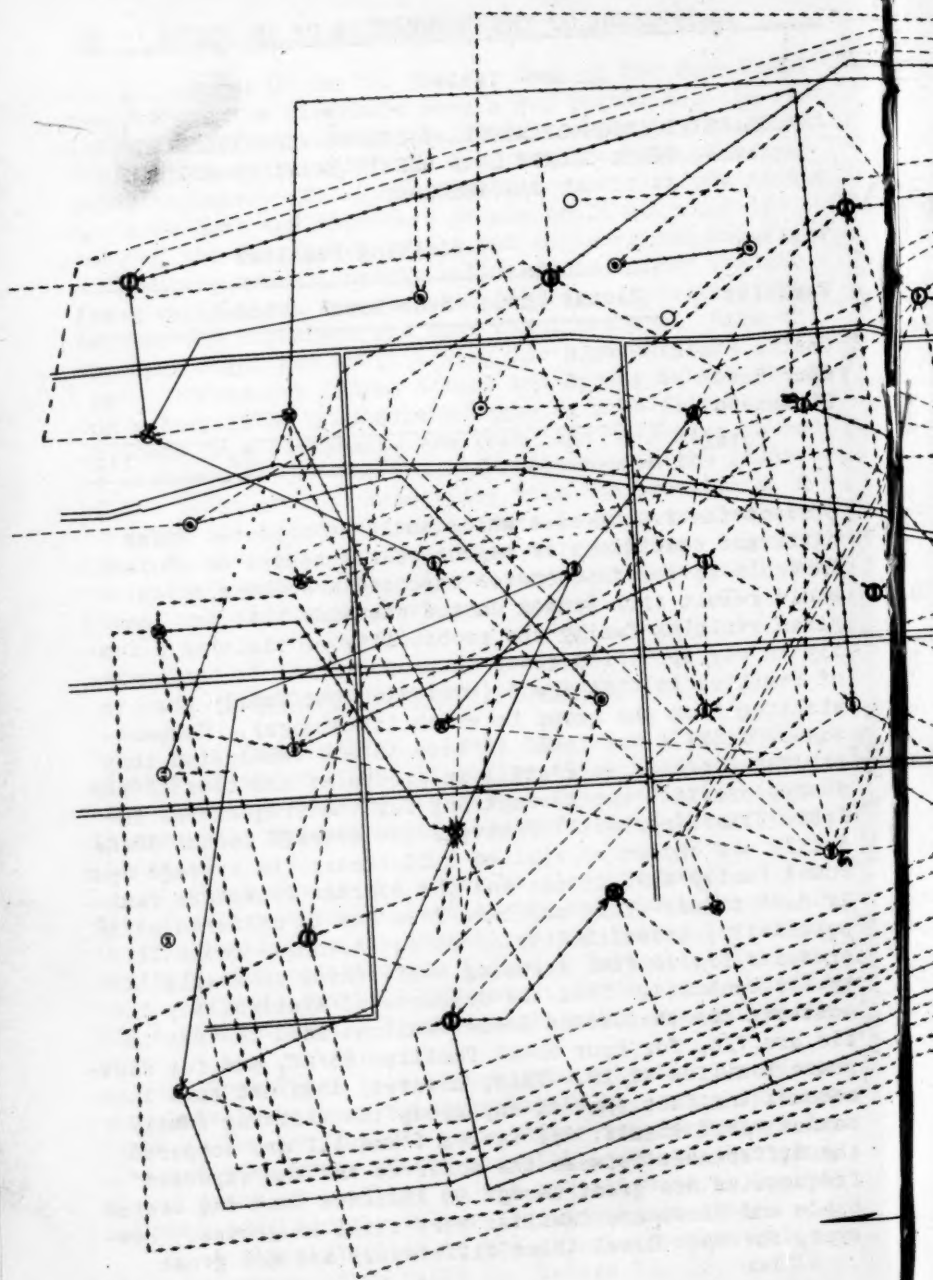
A classification of the actual observed relationships is presented in Table I. Tables II, II, and IV

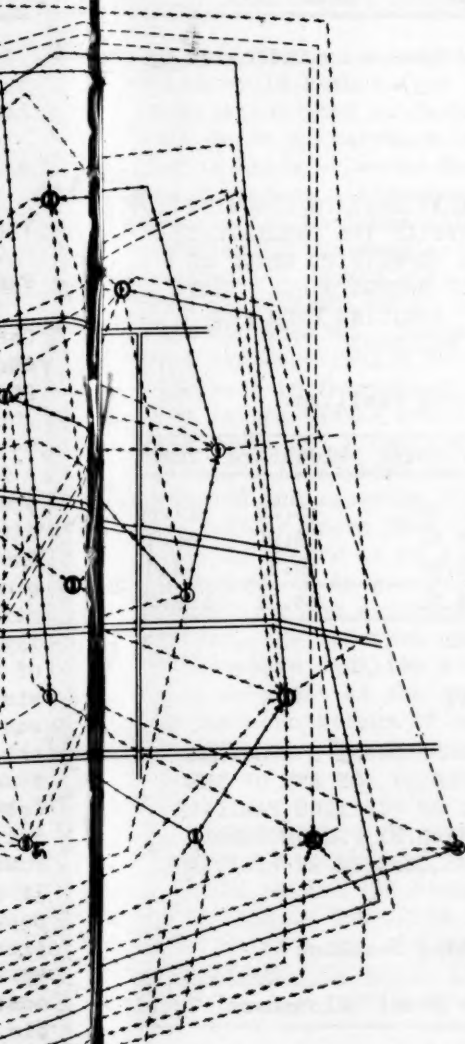
Table I

CLASSIFICATION OF ACTUAL VISITING RELATIONSHIPS
AMONG THREE GROUPS ON A RESETTLEMENT PROJECT,
JANUARY 1937

Visited	Visiting Families			
Families	Cactus Shade	Spur Rowel	Plowshare	Total
Cactus Shade	5	1	1	7
Spur Rowel	0	54	11	65
Plowshare	1	18	21	40
Total	6	73	33	112

present the frequencies which would be expected under different conditions of random relationships or choices. In Table II the frequencies expected are those which would result from random choice assuming that for any given visiting family the probability of visiting a family in any specified group is proportional to the number of families in that group (excluding the family that is visiting from the group to which it belongs). Comparison of Table I and Table II lead to the conclusion that all three groups were still in-groups at the time of the study, provided the assumptions for the frequencies in Table II are correct. However, the average Cactus Shade family was chosen or visited 1.16 times; the average Spur Rowel family 2.95 times; and the average Plowshare family 3.33 times. This may have been due to differences in popularity, accessibility or other factors. Table III presents frequencies assuming differences in availability for contacts. Thus the measures of availability for contacts for the Cactus Shade families used in this table are $7/6$, for Spur Rowel families $65/22$, and for Plowshare families $40/12$. This, however, does not take into account the fact that in any group the visiting family cannot visit itself. If Tables I and III are compared the differences between the observed and the expected frequencies are great enough to indicate that the Cactus Shade and Plowshare families were still in-groups. However, for Spur Rowel these differences are not great





- Indicates direction of visit
- Resident of colony
- Moved away
- NEW ACQUAINTANCE
 - Mutual
 - Single
- RELATED
 - Mutual
 - Single
- OLD ACQUAINTANCE
 - Mutual
 - Single
- ⊗ *Howmanas*
- ⊖ *Spur Ramal*
- ⊙ *Ceres Innes*

Chart 1. VISITING RELATIONSHIPS ON A RURAL RESETTLEMENT PROJECT,
JANUARY 1937.

The rings indicate the locations of the dwellings. The symbols in the rings designate the group to which the family belongs. Solid lines indicate visitations which are mutual, dotted lines indicate visitations for which one family did not report having reciprocated. Heavy rings indicate families which have moved away since January 1937. For example, family 12, a Spur Rowel family, visited with family 11, also a Spur Rowel family. Family 11 also visited with family 12 and the fact that the two families were kin is indicated by the crosses on the solid line. Family 37, a Spur Rowel family, visited with family 12 with which 37 had been acquainted before moving to the project. Family 12 did not visit family 37.

enough to have not resulted from chance as indicated by the Chi Square test.

Table II

CLASSIFICATION OF EXPECTED RELATIONSHIPS ASSUMING THAT FOR ANY GIVEN VISITING FAMILY THE PROBABILITY OF VISITING A FAMILY IN ANY SPECIFIED GROUP IS PROPORTIONAL TO THE NUMBER OF FAMILIES IN THAT GROUP (EXCLUDING THE FAMILY VISITING FROM THE GROUP TO WHICH IT BELONGS)

Visited Families	Visiting Families			
	Cactus Shade	Spur Rowel	Plowshare	Total
Cactus Shade	.77	11.23	5.08	17.08
Spur Rowel	3.38	39.31	18.62	61.31
Plowshare	1.85	22.46	9.31	33.62
Total	6.00	73.00	33.01	112.01

Table III

CLASSIFICATION OF EXPECTED RELATIONSHIPS ASSUMING THAT FOR ANY GIVEN VISITING FAMILY (OF ANY OF THE THREE GROUPS) THE PROBABILITY OF VISITING FAMILIES IN EACH OF THE THREE GROUPS WILL BE PROPORTIONAL TO 7 : 65 : 40, THE ACTUAL FREQUENCIES OF VISITING OBSERVED

Visited Families	Visiting Families			
	Cactus Shade	Spur Rowel	Plowshare	Total
Cactus Shade	.38	4.56	2.06	7.00
Spur Rowel	3.48	42.37	19.15	65.00
Plowshare	2.14	26.07	11.79	40.00
Total	6.00	73.00	33.00	112.00

In the construction of tables of frequencies which would result from chance, the introduction of the restriction that no family in any group can choose itself tends to decrease the expected frequencies in the Cactus Shade - Cactus Shade, Spur Rowel - Spur Rowel, and Plowshare - Plowshare cells. This means that the frequencies in these cells when subtracted from the frequencies in the same cells in Table I, with the observed frequencies, would show greater differences. This could lead to indications of in-groupings which might otherwise not show up. Table IV differs from Table III in that the restriction that no family in any group can visit itself is introduced. The reduction in the frequencies in the Cactus Shade - Cactus Shade, Spur Rowel - Spur Rowel and Plowshare - Plowshare cells when this restriction is applied does not change the differences in observed and expected frequencies enough to alter the conclusions drawn from the comparison of Table III and Table I. There is no proof that Spur Rowel families constitute an in-group if the assumptions introduced in determining the expected random frequencies are correct. However, the observed number of visiting relationships of Plowshare families with Plowshare families is almost twice as great as the expected frequencies would be under such conditions of random choice as those indicated in Table IV. The Plowshare and Cactus Shade groups were

Table IV

CLASSIFICATION OF EXPECTED RELATIONSHIPS ASSUMING THAT FOR ANY GIVEN VISITING FAMILY (OF ANY OF THE THREE GROUPS) THE PROBABILITY OF VISITING FAMILIES IN EACH OF THE THREE GROUPS WILL BE PROPORTIONAL TO 7 : 65 : 40, THE ACTUAL FREQUENCIES OF VISITING OBSERVED (EXCLUDING THE FAMILY VISITING FROM THE GROUP TO WHICH IT BELONGS)

Families	Visiting Families			
	Cactus Shade	Spur Rowel	Plowshare	Total
Cactus Shade	.32	4.60	2.08	7.00
Spur Rowel	3.59	41.69	19.73	65.01
Plowshare	2.20	26.72	11.08	40.00
Total	6.11	73.01	32.89	112.01

still in-groups. Differences in expected and observed frequencies are great enough to make Tables II, III, and IV significant as indicated by the Chi Square Test.

Although many factors important to the problem have not been given consideration the following general conclusions may be drawn:

1. Two years after the project was begun community integration had made considerable progress. None of the three groups are completely isolated from either of the other.

2. Old cleavages still existed as indicated by the fact that Plowshare families seemed to be visiting more among Plowshare families and Cactus Shade families more among Cactus Shade families than would be expected under the chance conditions assumed in working out the problem.

NOTES ON SOCIAL GROUP STRUCTURE IN AN
INSTITUTION FOR RETARDED CHILDREN

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Previous publications¹ have described the "self-determining" cottage groups in operation at the Wayne County Training School. In these groups we have attempted not merely to set up a "system" of self-government but also to provide a social situation wherein the individual can become a part of a closely-knit social group and can thereby come to appreciate the possibilities and advantages of his activities as an integrated part of a larger whole. The purpose here is two-fold; (1) to gain the advantages of "democratic" group formation, and (2) to reenforce a specific weakness in the personality of the retarded child.

The advantages to be gained from a "democratic" group organization, both in behavior adjustments and in creative production, have been pointed out by Lewin and Lippitt.² Our results with subjects somewhat lower in intelligence parallel theirs strikingly.

The existence of a "self-governing" system in an institution does not in itself, however, result in a "democratic" group as this is understood by Lewin and Lippitt. Such a system may all too easily become merely another form of "autocracy" wherein the autocratic

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1. Kephart, Newell C., Group Autonomy in a Children's Institution: An Experiment in Self-Determined Activity. *Mental Hygiene*, 22, 585-590, 1938.

A Method of Heightening Social Adjustment in an Institutional Group. *Amer. J. Orthopsychiat.*, 8, No. 4, 710-717, 1938.

2. Lewin, Kurt and Lippitt, Ronald, An Experimental Approach to the Study of Autocracy and Democracy: A preliminary note. *Sociometry*, 1, 292-300, 1938.

function is shifted from the adult to some few members of the group. In such a case the individual is in virtually the same situation found in "autocratic" groups and his behavior follows more closely the latter pattern.

In our groups, therefore, we place the dominant emphasis upon the creation of a closely knit social structure in which the individual becomes a dynamic part of an integrated social whole. Methods are sought which will help create a heightened homogeneity within the group. When this is achieved, the advantages of such a social position soon become apparent to the child. A sense of security and confidence develops. The desire to maintain this advantage acts as a deterrent to selfish and self-centered activities. Anti-social activities become--to the child himself--unjustifiable, not because they result in retribution from the institutional administration but because they threaten the existence of this social organization and its resulting advantages to him.

In such a group unproductive members find themselves naturally excluded. Those who are most productive become the leaders. A newcomer at first recognizes his isolation on the periphery of the group, but, when once he has demonstrated his ability to contribute to the group's activity, he finds himself rapidly becoming included within the group. As his social position becomes more dynamic, one sees his behavior aberrations decrease both in frequency and in magnitude.

The adult leader finds himself less and less of a disciplinarian and more and more of a counsellor. The questions which he is asked become less and less concerned with the quality of specific acts and more and more concerned with the general implications of lines of conduct. Inevitably important problems of ultimate personal adjustment begin to be brought to him.

Variations of the technique devised by Moreno have been found useful in objectively and graphically picturing the homogeneity of such groups. By thus revealing the internal social structure, points of approach (in terms of individuals) for moulding opinion can be determined. Those individuals who need special help can also be discovered. Through repeated administrations, the effect of a specific program on group organization can be evaluated.

In the case of retarded children the social structure of the group is particularly important. These children experience extreme difficulty in finding a place in normal community groups because of their relative inability to achieve and their consequent inability to contribute to the group. Almost universally they are left out and as a result often develop an acute sense of insecurity in social situations. This in turn further magnifies their inability to achieve and leads to even further social rejection. Too often in this fashion their achievement in social situations drops far below their real ability level.

As a result of such a failure to establish a dynamic social position such children are denied the opportunity to learn the advantages of truly social conduct as opposed to asocial or anti-social conduct. Their appreciation of the desirability or undesirability of forms of behavior, in other than a rote learning fashion, is limited. As a consequence minor delinquencies or problem behavior develop.

The social structure in a children's institution has within it certain inherent differences from the usual family and community organization. Casual notice of the extreme differences in the adult-child ratio alone suffices to emphasize the importance of this consideration. In the normal community situation the adult influences the child's social stimulation not only quantitatively through his adult contribution but also qualitatively since adults, in relatively large part, direct children's social groups toward those activities which have implications for growth and development. In an institution, therefore, the effectiveness of the children's group must be increased not alone because it must compensate for the loss in quantity of social stimulation, but also because the direction of the child's activities toward constructive ends must, to a large degree, be accomplished through forces within the group itself.

We feel that the development of such strong social configurations has a definite implication in therapy. Certain difficulties, which are extremely resistant to attack by individual treatment methods, here drop out quickly and naturally. Furthermore, where needed, the techniques of the clinical psychologist and

psychiatrist, reserved for the more intimate interpersonal relationship, become much more effective.

Whereas, on the one hand, failure to recognize the importance of social group structure may threaten the original purpose of the institution--to serve as a benevolent foster parent; on the other hand, attention to the development of such structures facilitates a further shift from mere custodianship to a positive contribution to the social education and rehabilitation of the child.

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OPEN FORUM

Because sociometry is a comparatively new development in the field of the social sciences, a discussion of the approach to the problem of inter-personal relations, directions of research, and the make-up of the Journal should be valuable. Beginning with this issue, Sociometry, A Journal of Inter-Personal Relations, opens itself to the critical comments of its readers. In order to make these comments and suggestions representative of the interests of our readers, we hope all future contributions will be sent unsolicited. An attempt will be made in another issue to draw together in one article all questions raised so that the position of sociometry in the social sciences may be better understood.

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Cambridge, Massachusetts

Of the need and value of Sociometry as a publication in the growing field of social psychology I am fully convinced. It performs three significant functions. (1) By providing an additional outlet for important research in social psychology it supplements other existent but inadequate periodicals. (2) By virtue of its slight unorthodoxy it gives a valuable stimulus to research outside the beaten paths of investigation which other journals, because of their set traditions, incline to favor. (3) By its liberal recognition of the inter-relationships between the fields of sociology, psychology, and psychiatry it gives new breadth and catholicity to social psychology.

Although this journal has already attained a distinguished place for itself among professional periodicals, I am not pleased with its title Sociometry. By

"sociometry" I understand the application of the special technique so brilliantly devised by Dr. Moreno. (If "sociometry" has any other meaning, it certainly is neither clearly established nor widely accepted.) Not that work with Moreno's technique should be hampered or discouraged; it is far too valuable for that. My question is merely whether any journal should ever take its cast merely from an existent technique. Do we not have far too much technique worship in social science? If we label our periodicals according to favorite techniques, we should have not only Sociometry, but also a Journal of Conditioning, a Journal of Factor Analysis, or a Journal of Time Sampling, and even a Journal of Uncontrolled Observation.

The provocative conceptions and new insights contained within the pages of Sociometry are, to my mind, somewhat weakened by the prominence given to one technique and to one vocabulary, capped by a limited and constraining title. Actually, of course, the journal has contained much valuable material in addition to its sociometric studies. It is obviously more catholic than its title suggests. Therefore, would it not be an improvement if the subtitle--A Journal of Inter-Personal Relations--alone were used? In making this suggestion I am not proposing any marked change in editorial policy, nor any limitation upon sociometric studies, but merely a formal recognition that the scope of the journal is, and should be, broad, and that its pages should be open to all solid research dealing with the relations between one human being and his fellows.

Gordon W. Allport

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Princeton, New Jersey

Dear Sir:

There seems to be some inconsistency concerning the general policy of the journal. On the one hand, there is Moreno's specific delimitation of sociometry to

inter-personal or non-institutionalized relations. On the other hand, is the more general policy expressed in the foreward (and carried out in practice) of bringing together material from many fields which affect personal development. I can see many advantages to limiting the journal to sociometry in Moreno's sense and making it a truly distinctive magazine. At this stage of the game, however, it may be more practical to appeal to a wider audience and follow the policy as stated in the foreward (of the first issue). In this event it might be well to insist arbitrarily that at least half the articles be sociometric in nature; otherwise the journal will become merely one more social psychology periodical.

Daniel Katz

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Northampton, Massachusetts

Dear Sir:

I think "Sociometry" should not be made to apply only to Dr. Moreno's diagramming techniques. Giving it such a name implies that it is much more than a highly promising and useful conceptual tool, which ought to remain flexible and subject to change from time to time. Brown, I think, made the mistake of coming out dogmatically with a graphic scheme for social phenomena which was premature and as a result his system is full of holes. Lewin has not made such a mistake with his own scheme, partly because of the mathematical rationalization and partly because he seems willing to see it change and develop. Your method seems to me to have more in common with Lewin's "vector psychology" and to be all the sounder for it. "Sociometry" as a term should probably include any method for denoting and measuring "inter-personal relations."

James J. Gibson

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Mount Vernon, New York

Dear Sir:

Answering your kind request for comments about the relationship of sociometry to other fields of inquiry, I find that the questions raised in my note of November 1, 1937, may still stand, as far as I am concerned.

Starting with the questions raised beginning with the third paragraph, on the basis of such rather practical problems,¹ I would be interested to know what, if any, connections may be indicated between sociometry and Kurt Lewin's dynamic-topological psychology? Can sociometry supply its own genotypic dynamics or will it have to turn to topological vector analysis in order to appraise a social set-up in lawful-generalized manner before and after sociometric reshuffling, and, especially, in order to estimate the nature of change in sizing up the whole group context?

Of what systemic significance for sociometry is the application of psychoanalytic-symbolical approaches to the study of race relations--as attempted by MacCrone (in his *Race Attitudes in South Africa*) and Dollard (in his *Caste and Class in Southerntown*)?

Next, apart from the study of group relations qua interactions, of what dynamic-systematic use can sociometry and spontaneity testing-training be for the study of individual personality? How far can or may sociometry be instrumental in fixating more definitively and meaningfully the rôle of more or less rigid

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1. With reference to a statement of Dr. Moreno (page 210, Volume I) as to what a "well-trained sociometrist" may do, it occurs to me that information about training for skilled work in sociometry may be made explicitly available to readers of the journal some time soon. Are there special training courses in progress, if so, where, how may one enter such training courses, what is considered suitable or requisite preparation for taking such a course, etc. Is there an Institute of Sociometry in progress up in Beacon or elsewhere? If not, is one planned, how soon may it become available? In the absence of a systematic training course, how does one go about in the meantime in the matter of achieving the skill of a "well-trained sociometrist"?

(flexible) stimulus-values in controlled reciprocal directions? That is, in showing not merely that attractions-rejections between a given number of dramatic personae are thus and so, and then, became thus and so as a result of certain psychodramatic, etc., techniques; but, also, just what changes took place in the total personality of the given actors or actresses? From that kind of problem-setting, how could we hope to generalize in order to be able to diagnose and prognosticate whether, given certain personality structures, sociometric re-training ought to be undertaken, and if so, what kind and in which direction? In short, what and how could sociometry incorporate and adopt from given schools of personality and what or how could it contribute to the former, in turn? Even more specifically, what can sociometry and related approaches be expected to contribute to the question of the individual personality's modifiability, pliability or inflexibility? Of the significance (symptomatic) of given person's empathic capacity and empathic range before and after such re-training? (We usually think of symptomatology in negative terms, as symptoms of disease or maladjustment; I would not distinguish here between symptomatology in differential terms before or after "recovery" or "improvement"--rather than think of the "disappearance" of partial symptoms, thinking here of total symptomatology before and after "treatment!")

Eugene Lerner

Boulder, Colorado

Dear Sir:

I would like to stress the importance of a solid, well thought-out theory as a prerequisite to our measuring forays. I can hardly believe that a good sociometric study is equally "scientifically good" whether the sociometrist starts with one theoretical bias or another. Good hard objective research does not float in a theoretical vacuum.

All this is well-known, perhaps, but when Moreno stresses the position that "we prefer to let our concepts emerge and grow with the growth of the experiment" and in general dismisses the very few attempts at a theory of social behavior in a rather cavalier fashion, I feel that the journal may shy away from "theoretical" papers. The cure for "bad theory" is "good theory," not, no theory. May I repeat again that I firmly believe that no sociometrist is an innocent with merely a measuring rod--if no place else, he carries his theory in his un verbalized knapsack.

I. Krechevsky

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Cedar Falls, Iowa

(Excerpts from letters received)

Dear Sir:

I have been reading the Journal of Sociometry, sent to me. Though my present observation is to some extent instinctive, I can see in aspects your procedure can be described in terms suitable for a description of Burrow's procedure, though there is a fundamental difference in objective and method, and each procedure appears to reach a part of the individual that the other does not. Both methods tend to bring about a projection of attention, so that under controlled direction, the individual can examine himself detachedly. Both tend to release, or relieve of, latent inhibitions, through organic practices. Both tend to "free" the personality for development. Many assertions made under one method appear to contradict those made under the other method. Yet I can see that the methods are complementary, and that an attempt should be made to integrate them.

Burrow terms his method "a group analysis." Perhaps ten ailing individuals are formed into a group, who may meet once a week, about an hour each time. The procedure appears to be (a) to foster a state of tension (conflict) among the members of the group, who because they stick together, form what you might term "tele"

relations to one another. (b) The leader, at ten-minute intervals, analyzes his observations from a phylo-analytic viewpoint. (The individual members of the group are encouraged to analyze each other's reactions, previous or current. Because the procedure is not understood, the effort creates the desired tension.)

The intention is to bring about an understanding (a) that the attitudes revealed, and the words expressed, form no basis for examination, are irrelevant and unacceptable as evidence. (b) That the only examinable phenomena are the feelings that underly the attitudes and expression.

In other words, the patient must learn to understand, through personal organic experience, that attitudes do not cause feelings, but inversely, that feelings create attitudes. (This understanding must form the basis of correction.) The feelings in turn are examinable in the form of organic tensions. Disordered feelings are due to abnormal tensions, and the patient is gradually taught how to recognize varied symptoms, and by a technique, to correct them in himself. (Jacobson's technique appears superior, which explains the apparently needed integration of methods. By learning Jacobson's technique first, Burrow's explanation of the behavioral symptoms is better understood.)

Following is a brief summary of my observation (I would like to present this subject more fully in another issue of Sociometry):

1. Human beings do not get along well together because of frustration. The latter is reflected (a) by inverted activity in the motor system, and (b) by excessive self-concern due particularly to this inverted activity in the speech and visual fields.
2. The frustration is primarily due to an erratic conception of how the individual functions as an intellectual organism, the emphasis being placed on the importance of the intellect (a secondary factor).
3. My outline endeavors to show that sufficient knowledge exists today to correct this condition (of frustration), if this knowledge is modified through orderly, progressive integration.

Harry Kronick

P.S.

(Later Communication)

I regret that space requirements compel you to so abbreviate my presentation, until it has hardly any meaning. I had wished to interest your readers to correspond with me at Cedar Falls, Iowa, so that jointly we might become interested to continue, what appears to be, a needed research.

All scientific procedure is today based primarily on organic, rather than on intellectual or theoretic learning. On the other hand, our entire social procedure is based primarily on intellectual or ideational learning, and the organic phases are neglected. This explains why man has developed a capacity for judgment in the scientific fields, and has no such capacity in the social field.

There are at present, to my knowledge, six newly developing fields of social research, which are proceeding as aspective phases, or loose ends, of what should be a common project. The orderly and progressive integration, and consequent modification of this developing knowledge apparently should bring about such progressive modification in the learner's kinesthetic function, as to permit a gradually increasing capacity for social observation,--on an organic basis.

I hope your readers will become interested to write to me.

Harry Kronick

REPORTS

BEACON HILL SANITARIUM, BEACON, NEW YORK

Sociometric work is done here among mental patients. Their relationships among all daily activities, in the dining room, sleeping quarters etc., are studied. An attempt is made to use their attractions and repulsions and the many ways in which they influence one another as a therapeutic tool. This study will be published in the next issue of Sociometry.

Dr. Ernst Fantl

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NEW YORK CITY

Testing of adult public speaking classes is being undertaken in order to determine relationships between the sociometric positions of individuals in the groups to spontaneity in speaking situations. Since the classes being tested meet for dinner sessions sociometric placement at the dinner table is possible.

J. G. Franz

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THE WESTFIELD STATE FARMS, REFORMATORY DIVISION, DEPARTMENT OF CORRECTION, BEDFORD, NEW YORK

Upon the basis of the sociometric findings, leaders of the cottages have been given psychodramatic treatment. (This treatment is offered in the form of a Personality Training Class.) Analytic material gotten by a discussion by all the members observing the psychodrama is used toward reeducation of the individual member by the group. My position is that of one merely directing the discussion.

Scenes for the psychodrama have dealt with the relations and attitudes of individuals toward members of their groups. Three general situations are presented: (1) Family relationships (girls from the group are used as auxiliary egos); (2) employer-employee relations; and (3) Social-legal problems. After each act members of the group are asked to give their opinions in the presence of the actresses.

At present, my impression is that the above method should be modified. Under the present arrangement the leaders selected in the cottages are usually the serious "problem cases." As leaders of the cottages, these girls have a bad influence upon the other inmates. We would like to attempt to find girls with more constructive personalities, bring them into the psychodrama, and train them for positions of leadership. These leaders would then become psycho-therapeutic agents influencing the groups through new channels.

The problem is this: Will we be able to develop new leaders? Will we be able to change the sociometric configuration of the cottages?

Bruno Solby, M.D.

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PELHAM, NEW YORK

In connection with the church of the Redeemer a personality group was formed. Twenty-six young people, the age ranging between 18-30 have joined this group, meeting once a week. The method employed is the psychodrama in which problems are enacted on the stage by the individuals. One or two of the group act as auxiliary egos. The problems are usually those involving interpersonal relationships and the enacting of them is afterwards discussed by the group.

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Stimulated by Israeli's "Abnormal personality and time" a trial is made with the different groups with which I am using the psychodramatic technique to enact "future autobiographies." According to Israeli such

"future autobiographies" reflect personality traits and mental processes which are of extreme importance in the diagnosis of psychological disturbances. Records are kept of such "future autobiographies" of psychotics and normals, the method of enacting them and the outlook upon future and relation to time problems studied.

Bruno Solby, M.D.

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